

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

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THE railroads have won a partial victory, possibly in the long run better than would have been a full victory. Uncertainty always has a depressing effect on the business world as well as on the individual. The uncertainty under which the railroads have lived by reason of their appeal to the Interstate Commerce Commission for an advance in rates has ended. All that the railroads asked was not granted. They secured some concessions, and in this won an important victory, in that their right to ask for higher rates has been officially recognized by the Interstate Commerce Commission, which was really brought into existence for the purpose of cutting down rates.

This partial victory officially establishes the position that through the Interstate Commerce Commission the National Government will protect railroad property when the railroads of the country, as a whole, can come into court with absolutely clean hands and show a need for higher rates with unquestionable integrity of management and financing to their credit, which have not always prevailed with all roads in the past.

The victory is, therefore, an important one, fraught with far-reaching consequences. Taking all things into consideration and looking the whole situation squarely in the face, it is probably best for the railroads themselves that they did not secure all that was asked. That would have given rise to increased agitation against them. The partial victory clears the way for general readjustment of the whole situation and a better understanding between the people and the railroads. The time has now come for the railroads to take a fresh start in doing the things so much needed in the betterment of roadbed and an increase of rolling stock. With this long uncertainty out of the way, the time has come to get down to business, to do the refinancing that may be necessary, even though money may cost more than in former years, and to start the wheels of activity throughout the land by starting the wheels of railroad improvement work.

Alphabetical Index, Page 102.

Classified Index, Pages 96 to 101.

Classified Opportunities, Pages 64 and 65.

BALTIMORE, JULY 23, 1914

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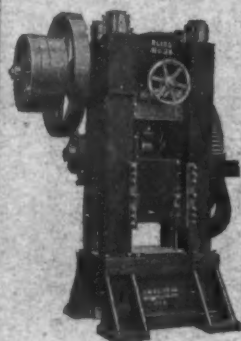


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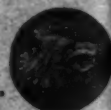
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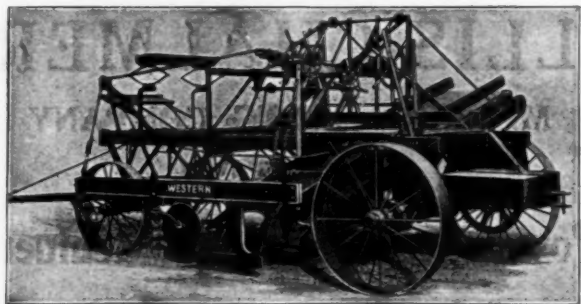
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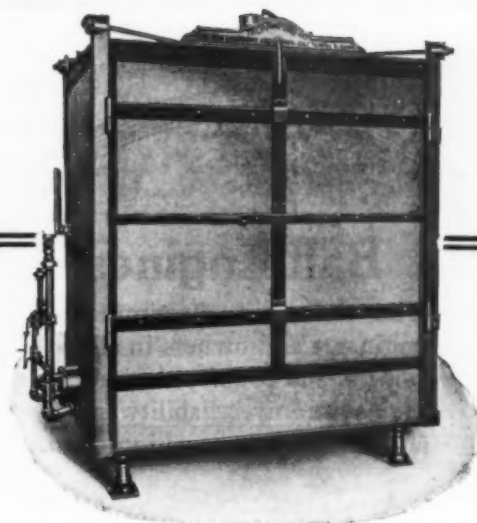
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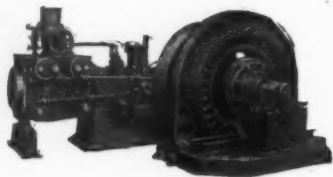
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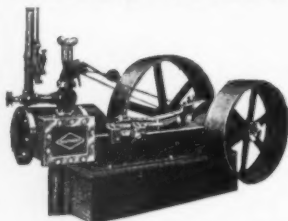
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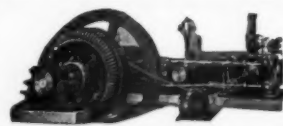
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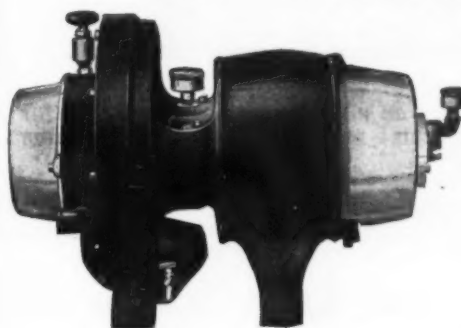
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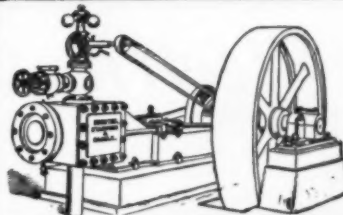
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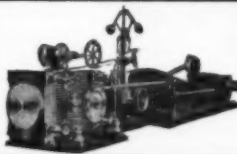
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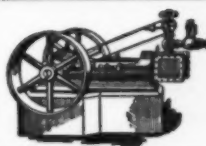
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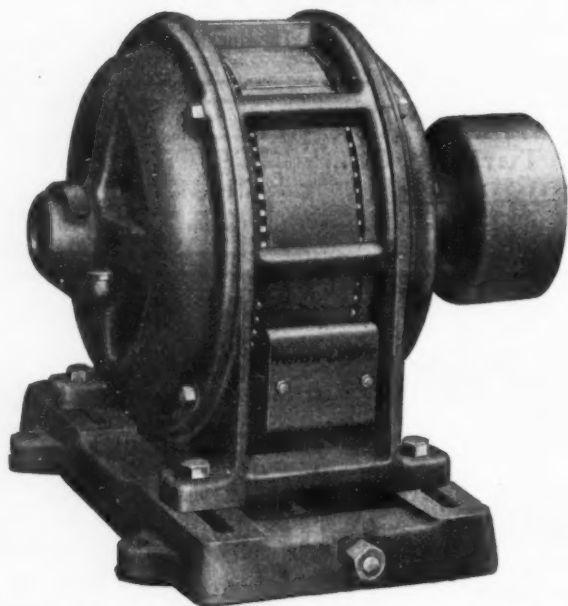
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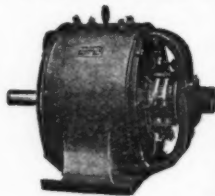
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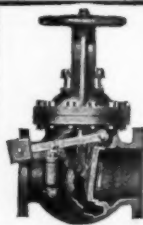
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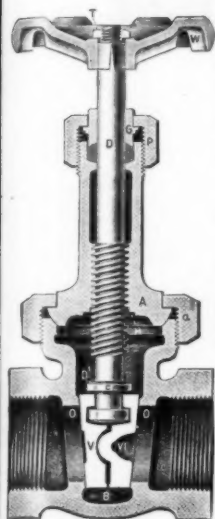
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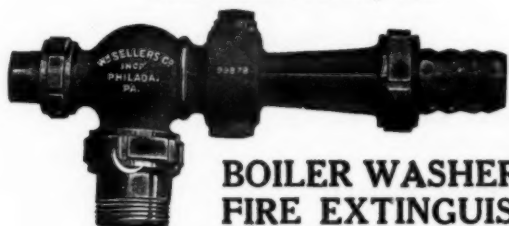


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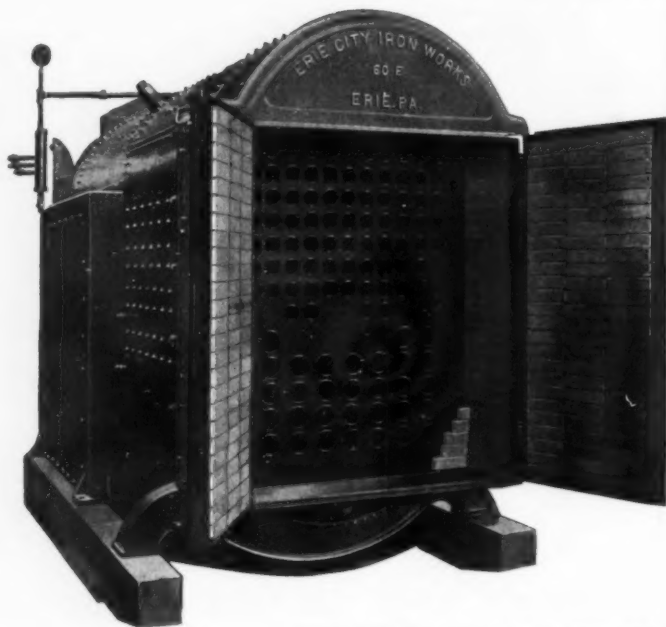
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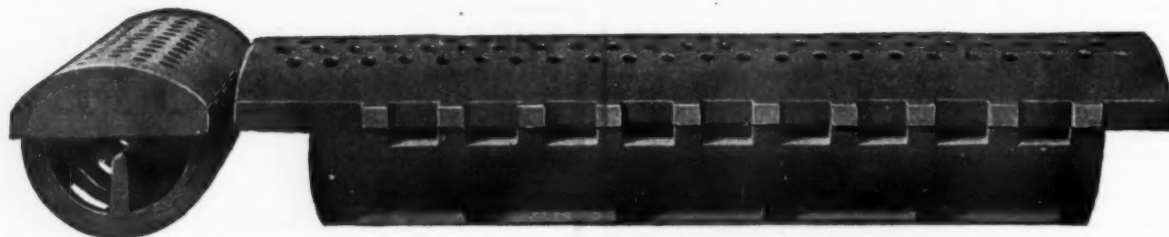
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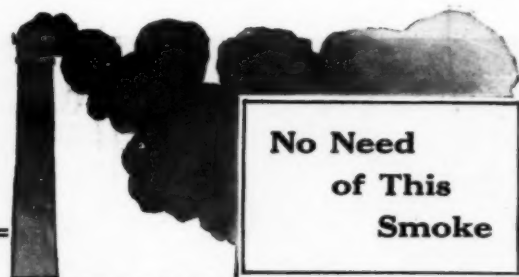
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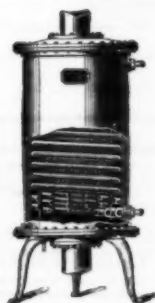
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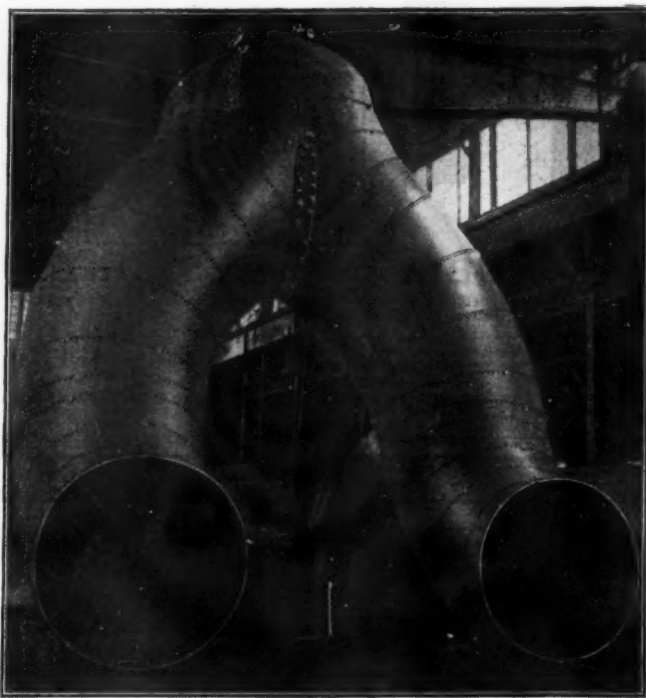
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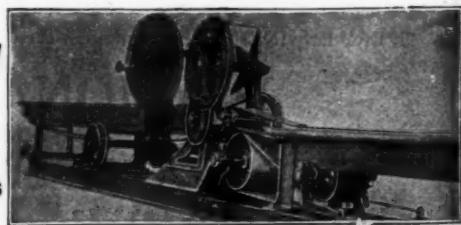
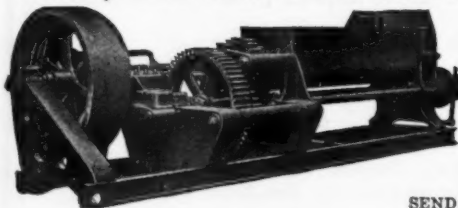
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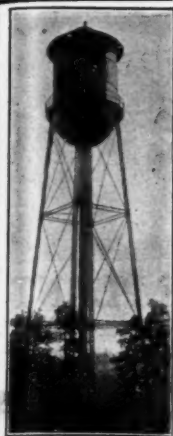
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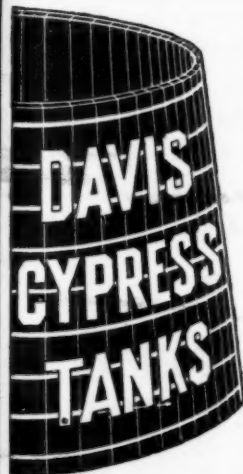
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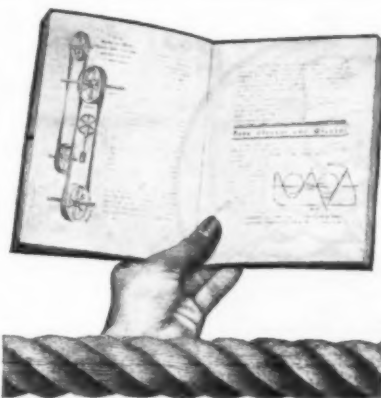
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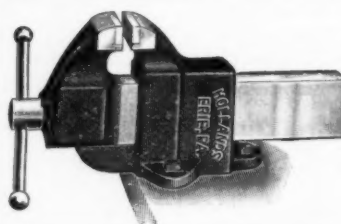
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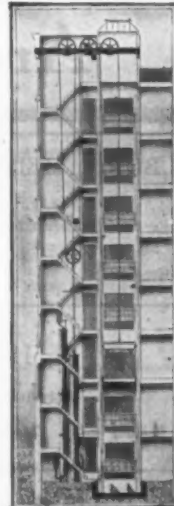


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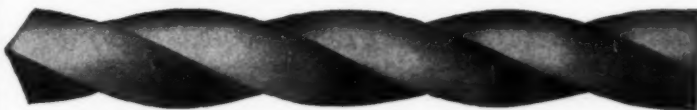
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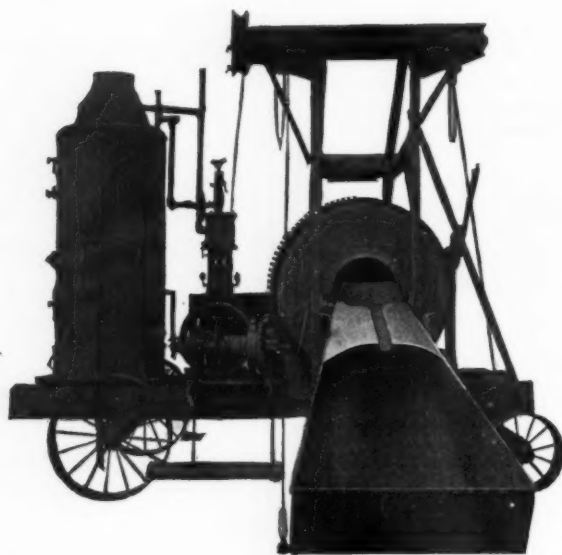
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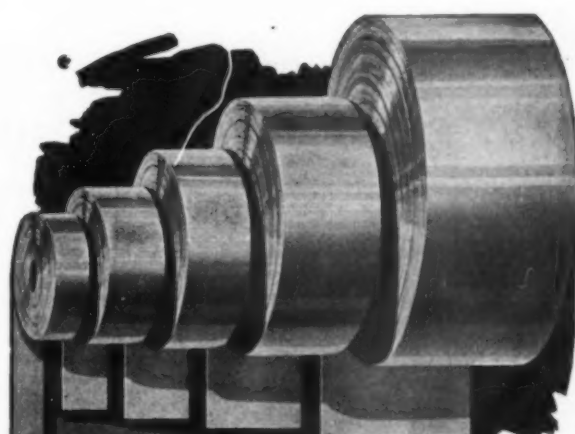
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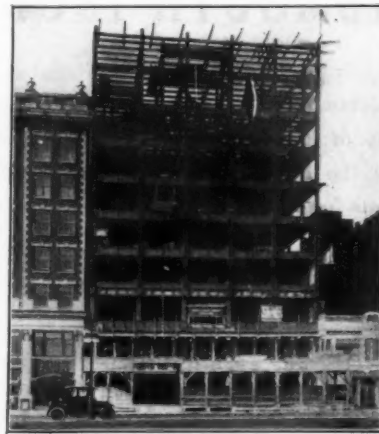
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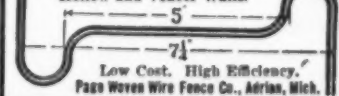
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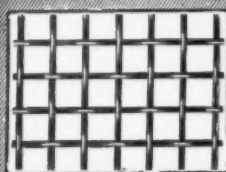
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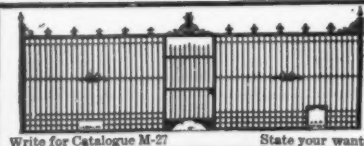
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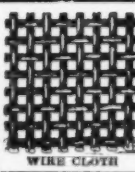
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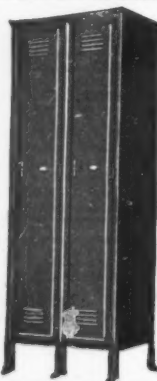
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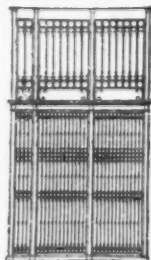
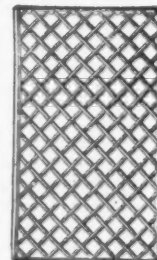
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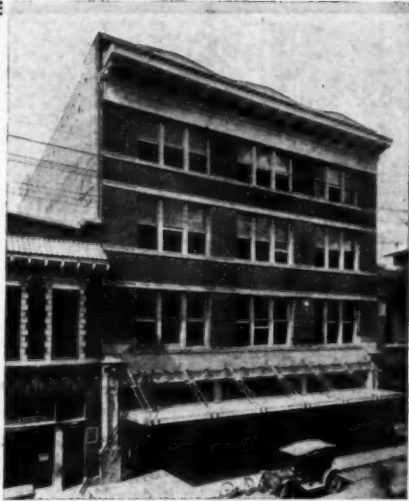
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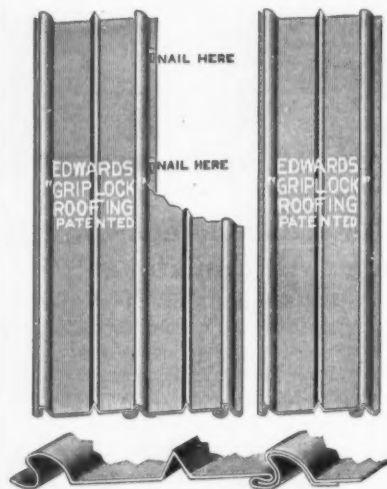
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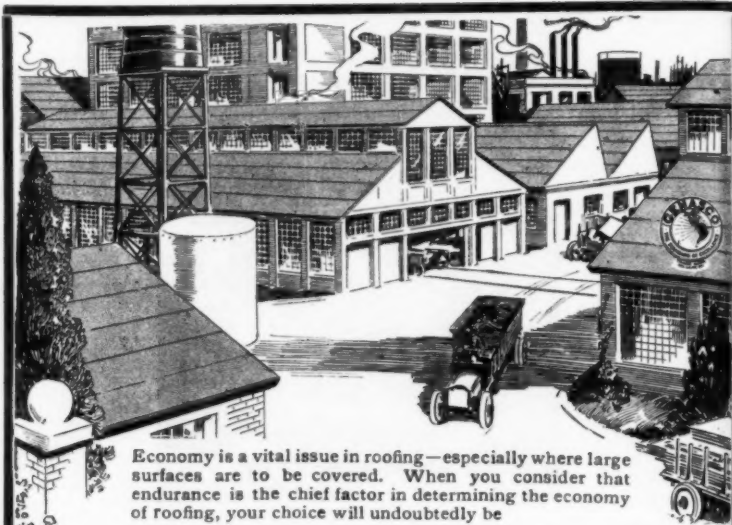
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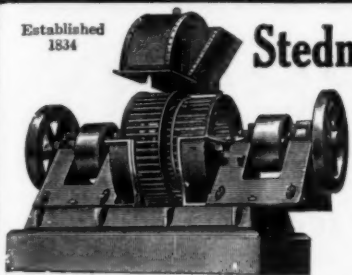
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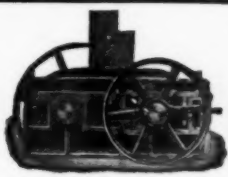
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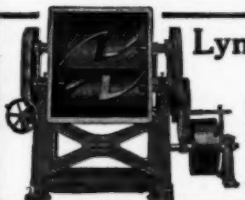
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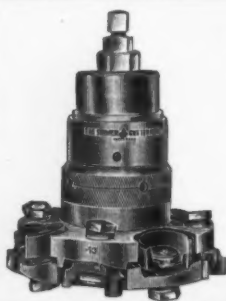
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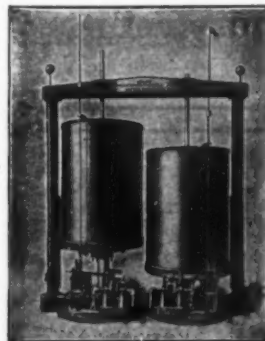


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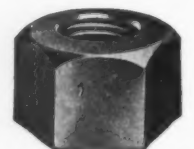
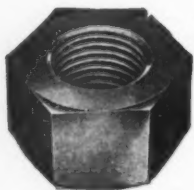
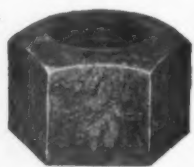
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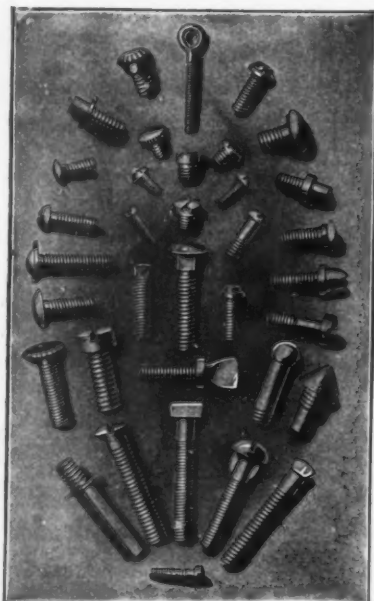
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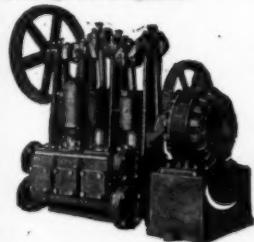
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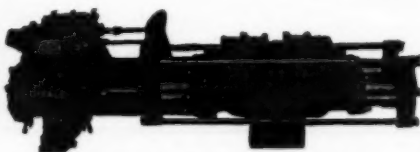
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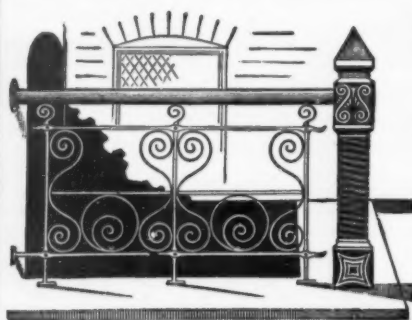
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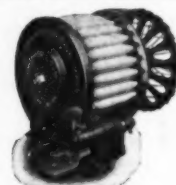
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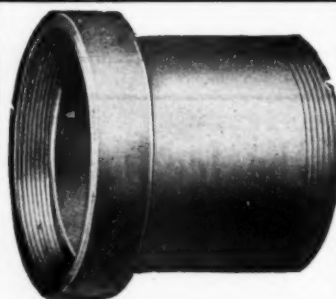
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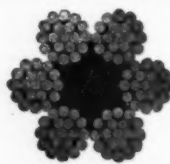
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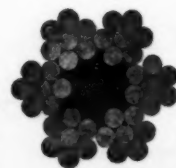
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IF it had not been for the South's cotton, what an exhibit the foreign trade of this country would have made in the fiscal year just ended! The value of all exports of merchandise in that period was \$101,257,594 less than their value in the preceding fiscal year, the decline being from \$2,465,884,149 in 1913 to \$2,364,626,555 in 1914. But there was an increase in the value of the exports of raw cotton of \$63,606,038, from \$546,840,930 to \$610,446,968, and the value of the cotton exports was 25.8 per cent., more than a quarter of the total value of all merchandise exports in 1914.

AN IMMIGRATION WARNING.

THE South may as well prepare itself against another move in the long-sustained campaign that has sought to use that section for the benefit of certain portions of Europe or of localities in this country congested with undesirable populations from abroad. The campaign has taken many forms, usually appearing in the guise of some "Southern" this or that. It has had temporary backing in official quarters at Washington under the sway of a realization of the party advantage in appealing in politics to elements in the electorate that will always remain alien as long as such appeals are made. Now and then Southern communities have been led into supporting it by hopes of reaping some material results from the enlargement of immigration activities. The various movements have invariably been preceded or followed by developments in foreign lands revealing the real inspiration. The latest appears in a dispatch from St. Petersburg to the New York Sun as follows:

Russia is beginning to recognize the necessity of assisting emigration from this country, and the Minister of Commerce submitted to the Cabinet today a bill to abolish some of the penalties hitherto attached to unauthorized emigration.

The bill makes allusion to the fact that 281,000 emigrants left Russia for the United States last year. Attention is also called to the fact that Russian subjects who have settled in America sent back \$50,000,000 to Russia last year. These facts have had great weight with the Ministry of Commerce.

The bill which is about to be introduced in the Duma will do away with the expensive passports which have heretofore been necessary, and in their place permits will be issued at a cost of only 10 cents. The half-yearly fine of \$7.50 imposed on absentees who have been more than six months abroad is to be abolished in the case of those who return by Russian steamships.

Under the provisions of the bill a fund is to be established to assist emigrants in Russian ports and abroad and for the appointment of a special commission to defend their interests in foreign countries. Emigration agents are

made liable to imprisonment for holding out false inducements to emigrate.

Immigration from Russia has contributed largely to the swelling of the ranks of the undesirables in this country. That such immigration has not been diverted to the South in any large measure is fortunate for the South. But it has not been because of any lack of efforts to make the South a field for exploitation in the interests of such immigration. Indeed, only the most careful study of the influences which systematically oppose efforts at Washington to increase the proper restrictions upon immigration to this country can give one a full idea of the extent and power of the interests behind the efforts. The dispatch from St. Petersburg is a warning. When any foreign country, Russia, Italy, Austria or any other, undertakes to assist its people to leave for the United States, it is time for the people of the United States to put up the bars. We do not want the people who by their own Government are encouraged to leave their country for their country's good.

A SIGNIFICANT GIFT FOR SOUTHERN EDUCATION.

THE gift by Asa G. Candler of \$1,000,000 to the University of the Methodist Episcopal Church, South, founded at Atlanta last week, with donations for its permanent \$5,000,000 fund, now aggregating \$1,528,000, is one of the most significant facts of this century in connection with Southern education. The gift is a generous one, larger, we believe, than any gift of the kind in one sum made in life by any other native of a State south of the Potomac. It is a practical gift, the full effect of which cannot now be measured. But its chief value is the emphasis given by it on two main lines.

It is, in the first place, a dramatic suggestion to men of wealth in the South to make, while they are alive, the kind of investment best calculated to bring the greatest returns to their section. The South has been accumulating wealth rapidly in the past twenty-five or thirty years. From corporations of all kinds alone it now has an annual income of nearly \$630,000,000. It is producing every year \$3,900,000,000 in factories, \$3,500,000,000 in agriculture, \$700,000,000 in forestry and \$400,000,000 in mining. Since 1880 it has added \$18,000,000,000 to its property values of \$9,177,000,000, practically trebling those values. Out of the abundance thus created have been made some large gifts to education, notably those of Hopkins, Rice, Duke and Tulane, while the people as a whole have spent about \$1,000,000,000 upon the common schools. But there have not been as many individual gifts in large sums as conditions have warranted. Too few Southern men who have succeeded in material things have been alert to divert part of their surplus into the right educational channels for greater production and higher benefits. The explanation is easy.

Just about the time when Southern men began to gain ability to follow natural instincts in making gifts for education in their section the South was made the special field for a campaign of dependence in education, the mainstay of a demand for "national aid." Upon the soil this prepared have been sown for a dozen years the pernicious seed of educational mendicancy. For a dozen years has been presented the spectacle of so-called educational leaders in the South hot-foot after doles from a couple of funds which, in their inception and in their administration, have tended to obscure fundamentals in education and to demoralize the body of teachers and students. In the case of quite a number of institutions supposed to stand for training under denominational influences, the influences that for a century and more had produced the really educated men of

the South, there have been legal and moral hair-splittings in the desire to get into contact with the dangled, dazzling dollars of "educational trusts," with scant regard for the sacrifices that have been made for many years by hundreds of thousands of men and women under the impression that they were helping to support their respective denominational schools. In repudiating the facts upon which such an impression was based or in scorning further denominational influences more than one institution in the South has signally demonstrated the kind of "education" to be induced by the "educational philanthropy" with which the South has been cursed for twelve years.

The antidote is offered in the act of Asa G. Candler, and none too soon. The reason for it is epitomized in his words:

In my opinion, the education which sharpens and strengthens the mental faculties without at the same time invigorating the moral powers and inspiring the religious life is a curse rather than a blessing to men; creating dangerous ambitions and arousing selfish passions faster than it supplies restraints upon these lawless tendencies in human nature; stimulating into activity more of the things by which men are tempted to wrong than it quickens the powers by which temptation is resisted with success.

I am profoundly impressed that what our country needs is not more secularized education, but more of the education that is fundamentally and intentionally religious. I see no way by which such religious education can be supplied without institutions of learning owned and controlled by the churches.

The issue is here clearly drawn. Twelve years of Rockefeller-Carnegie "philanthropy" in the South have emphasized money at the expense of men in education. How many successful Southern men will follow Asa G. Candler's example and give their sons and daughters as well as their means to the encouragement of true education, leaving to their natural and regrettable fate the institutions that have sold their birthright for a mess of pottage?

TO MAKE THE SOUTH KNOWN AS THE NATION'S GREATEST ASSET.

YOU have aptly expressed the real situation when you refer to the South as a region of almost illimitable possibilities in every line of human activity, industrial and agricultural.

The development of the South means added prosperity to all the nation, and it behooves the business men of the day to become better posted in regard to every section of this great country of ours.

The holding of a regular meeting of our great Iron and Steel Institute is certainly a move in the right direction, and we are expecting to take advantage of the opportunity to be present.

This extract from a letter by Geo. M. Verity, president of the American Rolling Mill Co., Middletown, O., to the MANUFACTURERS RECORD sounds the real keynote of what ought to be the policy of every intelligent business man in the United States. It matters not what may be the political views of men, whether they are in sympathy with or opposed to the political views which dominate the South, the one dominant thing which the business men of this country should understand is that the resources with which nature has so liberally endowed this section, and the geographical location which it has given to the South, with three-fifths of the coast line of the entire country, necessarily make it the greatest material asset of the nation.

In line with this thought are statements made by several members of the American Iron and Steel Institute, whose letters about the Birmingham meeting appear elsewhere. S. T. Wellman of Cleveland writes:

I am much interested in the future of the iron business of the South, and have no doubt it will grow to be an enormous factor, increasing the wealth of the whole country as well as the South. By using the improved methods

that are constantly being developed, iron manufacturers down there are going to be able to make the cheapest iron and steel in the world. Nowhere else that I know of can you stand on the top of a blast furnace and see the coal, iron ore and limestone that is being used.

H. S. Durand of the American Steel & Wire Co., Chicago, which has put over \$4,000,000 into a plant at Fairfield, near Birmingham, writes:

The American Steel & Wire Co. is deeply interested in the South because of the rapid onward movement in that section, and particularly because of the recent opening of its large plant at Birmingham. This plant, which is one of the largest and most complete wire plants in the world, is evidence of the confidence this company feels in the future of the South.

William A. Rogers, Rogers, Brown & Co., Buffalo, N. Y., writes:

A visit to that center of progress and industrial activity is always interesting. Its growth is one of several examples of the marvelous development of the iron and steel industry in this country. My business life spans the history of the place from the time it was a small, mosquito-infested railroad hamlet to its present stately period of fine stores, skyscrapers, beautiful residences and great manufacturing plants.

The South is a region whose natural resources and area will make it easily capable of supporting a population twice as great as that of the United States at present, and of producing far more than twice the wealth and the business development of this nation with its present population of 100,000,000 people. The development of this section means the enrichment of the nation. It means the broadening of its national life. It means the bringing of the people of the South and the North and the West into closer and more harmonious relationship, and to a better understanding in political as well as in business affairs.

Mr. Verity and others show their appreciation of these facts in the letters quoted, but some of the letters received from leading members of the American Iron and Steel Institute indicate the great need of a broader understanding of the South by some of the foremost men of the country. Several of these letters indicate that some men of broad business affairs do not yet begin to understand the South nor to take it seriously, while a few simply indicate an entire lack of knowledge of its climatic advantages and business development. One of the leading business men of Philadelphia writes to ask whether Birmingham has sufficient hotel accommodations to take care of a largely-attended meeting of the American Iron and Steel Institute. Another member expresses the fear that it will be too hot in October to visit Birmingham, and in this shows how little he understands the climatic conditions in the South—a section which does not suffer from the intense heat of the North and West even in midsummer; a section in which sunstrokes are almost unknown, and where cool nights are almost the rule, certainly to a far greater extent than in many sections of the North and West. Statements such as these from men who know every other section of the country indicate the importance of bringing into this section these great conventions of men who cannot be induced to come South in any other way that all may understand this section as do such men as Verity, Rogers, Wellman and others.

It behooves the Birmingham people to see that men who attend the American Iron and Steel Institute have the opportunity to study that entire section; to see that they are carried up on the surrounding mountains and given the opportunity to look out upon magnificent mountain and valley views that rival many of those in Switzerland, which annually draw tens of thousands of visitors. Chattanooga ought to take an active part in arranging to have as many of these visitors as possible stop in that city, and from Signal Mountain or Lookout Mountain gaze out upon one of the fairest scenes on earth and note the amazing possibilities of that section. It may be taken for granted that the Birmingham people will be very active in arranging for matters of this kind, but it may be properly suggested that there ought to be the most attractive invitations that the engraver's art can provide sent direct to every member of the American Iron and Steel Institute in order to make sure of the largest attendance which this organization has ever had at any of its meetings.

Atlanta needs to carry out in the same spirit the work of bringing to the American Road Congress in

November the leaders in every department of road-building activity, and when they have brought them to that city make sure that they will have the opportunity of seeing what the South is doing and what it can do.

The American Bankers' Association, which will meet in Richmond in October, ought to be made by the Richmond people of tremendous value not alone to Richmond, but to the South. Without undertaking to make any sectional domination of the work of the Bankers' Association, there ought to be the most elaborate presentation of the resources and advantages of the South, with Richmond as a type of what the South has achieved and what it is preparing to do in the future.

These three great conventions can be made, if the opportunities be wisely utilized, to bring many people in the North and West into a closer personal relationship with the South, what it has, what it is doing and what it offers to the capitalist and the business man as an inviting field for investment in every line of activity. The three cities upon which the chief responsibility will rest—Richmond, Atlanta and Birmingham—are types of the whole South, and we feel sure can be counted upon to rise to the opportunity and to make the delegates to these conventions realize, as Mr. Verity expresses it, that the South is a region of almost illimitable possibilities, and that its development means added prosperity to all the nation.

MILLIONS FOR RAILROAD BRIDGES TO UNITE THE WEST AND SOUTH.

THE official announcement that the Mobile & Ohio Railroad has set aside \$5,000,000 of its new financing for the purpose of constructing a bridge over the Ohio River at Cairo, Ill., whenever circumstances show that it is necessary, directs attention to the several important bridge enterprises already under way for the purpose of establishing new through routes between the South and the West, the latter including the Middle Western States as well as those beyond the Mississippi.

At Memphis the first of these is quite well advanced, this being the J. T. Harahan memorial bridge over the Mississippi River, which is being constructed by the Arkansas & Memphis Bridge & Terminal Co. for the Rock Island Lines and which will cost about \$4,000,000. Another is the big bridge at Metropolis, Ill., which will connect the Burlington system and the Hill roads with the Nashville, Chattanooga & St. Louis Railway and the Louisville & Nashville Railroad. Contract for the pier work has just been let to the Union Bridge & Construction Co. of Kansas City, and the specifications for the steel superstructure are before various manufacturers preliminary to their submitting bids for its erection. This structure will cost about \$3,500,000. The third bridge, for which preliminaries are in progress, is that of the Chesapeake & Ohio Railway at or near Portsmouth, O., at the beginning of a new line which the company proposes to build up to Columbus, O. It will cost between \$2,000,000 and \$3,000,000, and altogether the three plans mean the expenditure of about \$10,000,000 for river crossings of great importance to the railroads of the Southern States, with possibly \$5,000,000 more later on by the Mobile & Ohio.

The Burlington bridge has been talked of for several years. It was long generally known that the Hill roads desired a line down to the Eastern ports on the Gulf of Mexico, and that no efforts would be spared to secure it, but there were tedious obstacles to be overcome in the way of necessary legislation, discovery of a suitable point for the construction of the bridge, obtaining of the necessary rights of way and other matters which constituted a combination of facts that imposed delay after delay in the way of the plan. It must also be remembered that the bridge will not of itself alone provide a direct connection between the lines named, but that the construction of a twelve-mile railroad from the southern end of the bridge to Paducah, Ky., is necessary to complete the link from the great grain fields of the Northwest to the cotton fields of the South, a steel-bound highway of commanding capacity for transportation, one which is capable of practically unlimited expansion to meet the growing requirements of

the territory depending upon it for facilities to reach the markets of the world.

The Memphis bridge of the Rock Island will provide a crossing for not only the extensive system of the Chicago, Rock Island & Pacific Railway, but also for the Missouri Pacific-Iron Mountain system and the St. Louis Southwestern Railway. This structure represents only part of the expense which the Rock Island Lines will incur there, for from \$2,000,000 to \$3,000,000 more will be expended upon terminal yards, buildings, etc. Work upon the bridge was begun last fall and is now well advanced. A year or more is required for its completion, and when it is finished it will be traversed by trains moving between the South, the Northwest, the West and the Southwest, for the three systems which will use it have lines reaching out into Nebraska, to Colorado and far into Western Texas. All interchange business with roads of the South entering Memphis and the amount of business which will pass over it will be enormous.

It is to obtain a new coal-carrying route of ample capacity and easy grades that the Chesapeake & Ohio Railway will build the proposed bridge over the Ohio in the vicinity of Portsmouth and a 93-mile railroad from there to Columbus, O., connecting with the Hocking Valley Railway. This is the main purpose of the plan, but there is no doubt that the road will be used also for general traffic and that a large amount of miscellaneous freight will be carried over it unless the coal traffic should become so enormous as to crowd other freight off its rails.

There is serious consideration being given at New Orleans to a proposition that a \$6,000,000 bridge be built over the Mississippi for general railroad purposes, the idea being that it shall be controlled by the Board of Port Commissioners and the Public Belt Railroad of New Orleans. Although this plan has not developed so far as to assure the construction of the bridge, there seems to be a reasonable prospect of its being built within the next several years.

These are the new and large river crossings projected by Southern railroads at present, but it is expected that others will develop from time to time in the next five or ten years, compelled by the growth of traffic and the more intimate relations established between the different sections of the country by the natural advance of industry and commerce within itself, and also by the enlargement anticipated as a result of the influence of the Panama Canal upon general business in the United States. The Mobile & Ohio Railroad is evidently looking forward to such conditions in providing for the Cairo bridge. It already has bridge facilities there over the Illinois Central, but it evidently looks forward to a time in the near future when expansion of traffic will compel the erection of a bridge for its individual use.

This movement indicates how the railroad leaders of the West and South are working to provide the facilities to meet the sure expansion of traffic between the two sections, and is in keeping with the extension of the Clinchfield line through the mountains of Virginia to meet the Chesapeake & Ohio in Eastern Kentucky.

AN UNUSUAL RAILROAD AND FACTORY DEVELOPMENT WORK.

A 14-mile railroad connecting with a large number of factories, and handling their product absolutely free of charge to them, is one of the very unique features connected with the operations of the Canton Company of Baltimore. This company, which has been in operation since 1828, when it was incorporated by the Maryland State Legislature, still owns about 1500 to 1600 acres of land facing the water-front in the lower harbor of Baltimore immediately adjacent to the city. A large number of big industrial enterprises have been built on the company's property, and during the last six or seven years about 3000 workmen's houses have been built in the neighborhood.

As outlined in the MANUFACTURERS RECORD some time ago, the company is planning some very large improvements, including the construction of a series of concrete piers, one of which, 850 feet long by 150 feet wide, is now nearing completion, while others will be built in the future as the requirements of the

shipping interests demand. In connection with this pier the company has let a contract for dredging a 35-foot channel from the main harbor channel, in order to provide ample depth of water for steamers using this pier and others to be built by the company in the future. The plans of the company, which is abundantly able financially to carry out all of its undertakings, are broad and ambitious. They look to providing very extensive pier and warehouse facilities on a scale commensurate with the great property interests of the company and with the growth of Baltimore.

An interesting fact, already mentioned, is that the railroad owned by the company, having 14 miles of track and reaching every factory on the property, carries freight entirely free of charge, all charges from the factories to the different railroads being absorbed by the railroads themselves. President Brooks of the Canton Railroad Co., in referring to this, says:

This was our main intention in bringing about the condition that now exists, viz., that we wish the port of Baltimore to be free of any additional charge over the flat Baltimore rate, and this has been accomplished.

This line receives and delivers freight to and from all the railroads, to and from all the factories reached by it, and does this without cost to the receiver or the shipper. A plan so broad as this, backed by some of the leading financial people of the city, with a property offering such great possibilities for development, is significant of the way in which big things are being done in Baltimore and in the South these days.

BRITISH-GROWN COTTON.

FOR unblushing and unwinking optimism give us the British Cotton Growing Association. This is the time of the year, on the verge of the movement of the new crop of American cotton to market, when reports of cotton growing in British possessions become the vogue in official documents of our Government. That accounts for the publication, through United States Consul W. Henry Robertson at Manchester, England, of a summary of the ninth annual report of the British Cotton Growing Association, which, he says, "reveals the rapidity with which the association's business has grown." It seems that the amount of cotton that has passed through the hands of the association has increased from 16,713 bales in 1908 to 47,466 bales in 1913, and that the increase in production in new fields in the British Empire in the past three years has been from 60,800 bales to 78,800 bales, with hopes of a production of 100,000 bales this year. Says the report:

The quality of the cotton produced in Uganda generally is satisfactory and is filling a distinct want, as it can be sold almost on arrival as a substitute for the better grades of Texas cotton at prices ranging from 50 to 120 points on American middling.

On its surface that sounds portentous. But in "filling a distinct want," how much Texas cotton is being supplanted by Uganda cotton? The report does not give the answer. It is suggested, however, in the fact that in 1913 Uganda produced 26,000 bales of cotton and Texas ginned more than 3,777,000 bales.

Iron and Steel Statistics.

The following details as to the pig-iron and steel production in the countries and for the years named were compiled by the president of the British Board of Trade, the quantities being expressed in tons of 2,240 pounds:

Year.	United States.	France.	Germany and Lux-emburg.	Russia (except Finland).	United Kingdom.
Pig-iron.	Tons.	Tons.	Tons.	Tons.	Tons.
1910.	27,304,000	3,972,000	14,556,000	2,983,000	10,012,000
1911.	23,650,000	4,398,000	15,324,000	3,536,000	9,526,000
1912.	29,727,000	4,870,000	17,582,000	4,119,000	8,751,000
1913.	30,966,000	5,226,000	18,982,000	4,539,000	10,482,000
Steel.	Tons.	Tons.	Tons.	Tons.	Tons.
1910.	26,095,000	3,258,000	13,479,000	3,479,000	6,470,000
1911.	23,676,000	3,775,000	14,778,000	3,870,000	6,565,000
1912.	31,251,000	4,333,000	17,024,000	4,416,000	6,903,000
1913.	31,300,874	4,561,000	18,645,000	4,824,000	7,780,000

The figures for 1913 are provisional, but indicate, in each instance where given, a substantial advance over the output during 1912.

Steel Ingots and Steel Castings in 1913

The Bureau of Statistics of the American Iron and Steel Institute has received from the manufacturers statistics of the production of all kinds of steel ingots and castings in the United States in 1913. It has been found necessary to estimate the output of a few plants. The statistics for 1912 were also compiled by the Bureau of Statistics, but for 1911 and all previous years they were compiled by the American Iron and Steel Association. In a special bulletin the bureau says that the production of all kinds of steel ingots and castings in 1913 amounted to 31,300,874 tons, against 31,251,303 tons in 1912. While the production in 1913 was the largest in the country's history, it was only 49,571 tons greater than the output in 1912. Of the total production in 1913, 30,280,130 tons were ingots and 1,020,744 tons were castings, against 30,284,682 tons of ingots and 966,621 tons of castings in 1912. The accompanying table, A, gives by States the production of all kinds of steel ingots and castings by processes in 1913.

Table A.—Steel Ingots and Castings in 1913.

States.	All kinds of steel ingots and castings—Gross tons.	Total ingots and all other castings.
Mass., R. I. and Conn.	2,476	2,476
N. York and N. J.	371,372	371,372
Pennsylvania	2,954,818	2,954,818
Del., Md., Dist. of Col., Va., W. Va., Ky., Ga., Ala., Tenn., La., Texas.	637,063	1,183,977
Ohio	4,024,662	2,726,219
Indiana and Illinois	1,475,424	3,444,960
Mich., Wis., Minn., Mo., Iowa, Utah, Kans., Cal., Ore. and Canal Zone, Panama	79,891	530,817
Total for 1913.	9,545,706	21,599,931
Total for 1912.	10,327,901	20,780,723

In 1913 there were 304 works in 30 States, the District of Columbia and the Canal Zone, Panama, which made steel ingots or castings, as compared with 306 works in 31 States, the District of Columbia and the Canal Zone, Panama, in 1912. The accompanying table, B, gives the production of all kinds of steel ingots and castings by processes since 1898, in gross tons.

Table B.—Steel Ingots and Castings Since 1898.

Years.	Ingots and castings—Gross tons.	Total ingots and all other castings.
1898.	6,609,917	2,230,292
1899.	7,586,354	2,947,316
1900.	6,684,770	3,398,135
1901.	8,713,302	4,656,309
1902.	9,138,363	5,687,729
1903.	8,592,829	5,829,911
1904.	7,850,140	5,998,166
1905.	10,941,375	8,971,376
1906.	12,275,830	10,890,413
1907.	11,667,549	11,549,736
1908.	6,116,755	7,836,729
1909.	9,330,783	14,493,936
1910.	9,412,772	16,504,509
1911.	7,947,854	15,598,650
1912.	10,327,901	20,780,723
1913.	9,545,706	21,599,931

Included in the total for 1913 are about 714,357 tons of ingots and castings which were treated with ferro-vanadium, ferro-titanium, ferro-chrome, nickel or other alloys, of which about 625,430 tons were ingots and about 88,927 tons were castings, as compared with about 792,501 tons in 1912, of which about 689,392 tons were ingots and about 103,109 tons were castings. Of the total in 1913 about 74,924 tons were Bessemer

Table C.—Steel Ingots and Castings Since 1898.

Years.	Ingots and castings—Gross tons.	Total ingots and all other castings.
1898.	8,800,920	131,837
1899.	10,458,745	181,112
1900.	9,995,626	192,803
1901.	13,156,025	317,570
1902.	14,556,315	390,935
1903.	14,104,713	430,265
1904.	13,529,676	530,211
1905.	19,463,189	560,767
1906.	22,624,431	773,705
1907.	22,559,477	806,117
1908.	13,677,027	346,230
1909.	23,298,779	656,242
1910.	25,154,087	940,832
1911.	23,029,479	646,627
1912.	30,284,682	966,621
1913.	30,280,130	1,020,744

steel ingots or castings, about 599,800 tons were open-hearth, about 28,279 tons were crucible, about 11,254 tons were electric, and about 10 tons were miscellaneous. The accompanying table, C, gives separately the produc-

tion of all kinds of steel ingots and direct steel castings from 1898 to 1913. Gross tons of 2,240 pounds are used.

The total production of all kinds of steel ingots in 1913, not including steel castings, amounted to 30,280,130 tons, against 30,284,682 tons in 1912, a decrease of 4552 tons. The production in 1912 was the largest in our history. The accompanying table, D, gives the output of all kinds of steel ingots by processes in 1913. Gross tons are used.

Table D.—Steel Ingots in 1913.

States.	Ingots only—Gross tons.	Total ingots, gross tons.
Mass., R. I., Conn., N. Y. and N. J.	358,504	1,112,749
Pennsylvania	2,942,070	12,160,887
Md., D. of C., W. Va., Ky., Ga., Ala.	628,859	1,163,533
Ohio	4,016,664	2,578,295
Ind., Ill., Cal., Utah and Cal.	1,519,103	3,674,271
Total for 1913.	9,465,200	20,689,715
Total for 1912.	10,259,151	19,909,875

The accompanying table, E, gives the production by processes of all kinds of steel ingots from 1898 to 1913, in gross tons.

Table E.—Steel Ingots Since 1898.

Years.	Ingots only—Gross tons.	Total ingots, gross tons.
1898.	6,606,478	2,109,706
1899.	7,582,415	2,777,587
1900.	6,678,303	3,220,644
1901.	8,706,538	4,354,687
1902.	9,125,815	5,319,850
1903.	8,574,730	5,429,563
1904.	7,843,089	5,005,332
1905.	10,919,272	8,444,836
1906.	12,243,229	10,360,522
1907.	11,634,276	10,803,211
1908.	6,096,196	7,524,952
1909.	9,296,969	13,892,896
1910.	9,354,437	15,641,158
1911.	7,890,755	15,027,459
1912.	10,259,151	19,909,875
1913.	9,465,200	20,689,715

In 1913 the production of all kinds of steel castings amounted to 1,020,744 tons, against 966,621 tons in 1912, an increase of 54,123 tons, or nearly 5.6 per cent. The accompanying table, F, gives the production by processes in 1913.

Table F.—Steel Castings in 1913.

States.	Castings only—Gross tons.	Total castings, gross tons.
Mass., Conn., N. Y. and N. J.	15,344	78,982
Pennsylvania	12,748	361,360
Del., Md., Dist. of Col., Va., W. Va., Ky., Tenn., Ga., Ala., La., Tex. and Ohio	16,302	168,368
Ind., Ill. and Mich.	18,588	194,406
Wis., Minn., Iowa, Mo., Kans., Cal., Utah, Ore., Wash., Cal., and Canal Zone, Panama	17,624	107,100
Total for 1913.	80,506	910,216
Total for 1912.	68,750	870,848

Of the total production of steel castings in 1913 about 88,927 tons were treated with ferro-vanadium, ferro-titanium, or other alloys, of which about 21,173 tons were Bessemer castings, about 64,313 tons were open-hearth, about 2908 tons were crucible, and about 443 tons were electric and miscellaneous.

There were 223 works in 29 States, the District of Columbia and the Canal Zone, Panama, which made steel castings in 1913, against 222 works in 28 States,

Table G.—Steel Castings Since 1898.

Years.	Castings only—Gross tons.	Total castings, gross tons.
1898.	3,539	130,587
1899.	2,939	169,729
1900.	6,467	177,491
1901.	6,764	301,622
1902.	12,548	367,879
1903.	18,009	400,546
1904.	16,661	302,834
1905.	22,103	826,540
1906.	32,601	719,891
1907.	33,273	746,525
1908.	20,559	311,777
1909.	33,814	601,040
1910.	58,335	963,351
1911.	57,191	571,191
1912.	68,750	870,848
1913.	80,506	910,216

the District of Columbia and the Canal Zone, Panama, in 1912. The accompanying table, G, gives the production by processes of all kinds of direct steel castings from 1898 to 1913.

PIONEERS IN UPBUILDING.

"A Live Real Estate Agent Is Better Than a Dead Board of Trade."

Mr. Edward H. Bouton, who, since its organization 20 years ago, has been president of the Roland Park Land Co., which has made what is regarded as the most perfect suburban development in America, referring to the importance of the work of real estate agents as illustrated in the seventh annual convention of the National Association of Real Estate Exchanges of America, recently held in Pittsburgh, said to the MANUFACTURERS RECORD:

"I was very agreeably surprised with the spirit and scope of the convention work. As a specialist, I had had some doubt as to the amount of interest or benefit I might find in the convention, which I had supposed to be a gathering of general brokers. I was very glad I attended, and was much impressed with the extent of interest shown and the variety of topics discussed. There were delegates from all over the country, from Tampa and Jacksonville, Fla., to Seattle, San Francisco, Los Angeles, Spokane, and all in between. There were about 1500 delegates in attendance, from some 150 cities. There were a lot of big men in the convention—men of affairs and men who have done big things. They were all real estate men, or men identified in some way with real estate activities, and included those engaged in the general brokerage business handling all departments, and others who, like myself, are specialists and engaged in suburban development and other branches of real estate activities.

"It is significant that there was no one thing that received more applause than the reference in the speeches made to the necessity of establishing a standard of ethics among real estate agents throughout the country, and there was an overwhelming manifestation of the determination to drive out all those who have brought disrepute on the real estate business heretofore. We all know that the methods of certain types of real estate dealers have brought discredit on the name of real estate agent, until the general public is very likely to compare the trickiness of a real estate agent with the slipperiness of a horse trader. It is very evident from the spirit of this convention of representative real estate operators from all over the United States that this condition will be remedied at the earliest possible moment. Unquestionably the reputable real estate agent is a very valuable asset to any community. As I heard the matter put the other day by a real estate agent, who resented the disfavor in which real estate agents are held by a large class of people, 'a live real estate agent is a whole lot more of an asset to a town than a dead board of trade.' The National Association is going right into this question of establishing ethical standards, and will carry on a big campaign to that end. Efforts will be vigorously undertaken to widen the sphere of influence and go into every section of the country, arousing the real estate men everywhere, so that they won't tolerate any man in their ranks who is not a reputable dealer.

"The program of the meeting covered every variety of topic that concerns the development of a community, and the spirit of the association is evidenced in the fact that real estate exchanges and other real estate organizations in every city are urged and encouraged to interest themselves in all public affairs.

"Among the speakers were real estate men who told of the broad interest which real estate boards have taken in public enterprises and the activities shown in boosting and helping communities in every way. Some especially interesting specific facts in this connection were given by a delegate from Cincinnati.

"An interesting feature of the occasion was a cup contest to be awarded to the city whose spokesman best presented its merits in a five-minute talk. Baltimore, not being a member of the Exchange, had no spokesman. Some very excellent speeches were made, but the cup was awarded to Detroit, whose praises were certainly most eloquently presented. The cup is held by the city until the next convention, when it is again contested for in the same manner.

"Los Angeles made a very spirited and a successful fight for next year's convention. There were several Baltimore real estate men present in an informal and unofficial way, and we all came back very much impressed with the importance of Baltimore becoming a member of the association. It is impossible for anybody to not get inspiration from these meetings, and

those who attend bring back with them new ideas and broader views. All of us were very much in favor of having Baltimore become identified with the association, not only because we will doubtless then be able to get the national convention at Baltimore one of these days, but because of the benefit to the spirit and the viewpoint of the real estate operator, which is something we could have with us every day in every year. It keeps people from getting into ruts, this meeting with big men who do things in a big way. And by the way, speaking of ruts, Hugh Chalmers gave a very striking definition of a rut in a brilliant talk which he gave on 'Advertising and Salesmanship.' Mr. Chalmers said: 'The only difference between a rut and a grave is that one is a little wider and deeper than the other. Both are fitly occupied by the dead.'"

A VARIETY OF FARM PRODUCTS.

Traffic Supplied by Agriculture to the Norfolk & Western Railway.

Illustrative of the opportunities in agriculture in the territory traversed by the Norfolk & Western Railway is the following statement of farm products of Maryland, Virginia, West Virginia, North Carolina and Ohio carried by that road in the year ended with February, 1914, compared with the preceding 12 months:

Products.	1914.	1913.	Inc. or dec.
Steers, cows and calves, carloads.....	2,273	4,384	*1,111
Lambs and sheep, carloads.....	1,073	1,049	24
Horses and mules, carloads.....	431	274	157
Hogs, pounds.....	21,962,332	21,022,861	939,471
Poultry, pounds.....	6,435,512	6,618,487	*182,975
Eggs, crates.....	243,041	169,984	73,057
Wheat, bushels.....	1,139,259	1,673,818	*474,559
Corn, bushels.....	1,380,589	1,608,465	*227,876
Corn, bushels.....	1,380,589	1,608,465	*227,876
Oats, bushels.....	14,126	24,733	*10,607
Rye and barley, bushels.....	1,473	1,082	391
Cabbages, pounds.....	32,301,853	25,278,088	7,023,765
Potatoes, barrels.....	162,145	206,782	*46,637
Apples, barrels.....	138,591	329,919	*191,328
Raw fruits, crates.....	33,809	40,910	*7,101
Canned fruits and vegetables, crates.....	786,681	734,431	52,250
Truck products, crates.....	234,554	155,408	79,146
Peanuts, bags.....	778,661	779,423	*762
Tobacco, pounds.....	82,842,729	56,609,277	26,233,452
Hay, tons.....	22,122	27,945	*5,823
Cotton, bales.....	282	1,098	*816

*Decrease.

The Birmingham Iron Market.

[Special Correspondence Manufacturers Record.]

Birmingham, Ala., July 20.

The iron market is without special feature for the week just past. Orders involving small tonnage and covering wide territory, for immediate delivery, has been the general rule of the week's business, but, however, there has been a fair amount of inquiry, involving larger tonnage for delivery during the fourth quarter.

The large sales of pig-iron some weeks past have kept the forwardings up, and all the furnace interests are now shipping their make direct from the block; hence the accumulations of stocks have not been greatly reduced, the price for No. 2 foundry remaining firm at \$10.25 f. o. b. Birmingham, without any disposition upon the part of any of the interests to shade the same.

The furnace interests are not in the least disturbed by the order of the Interstate Commerce Commission granting the railroads time in which to show why freight rates should not be reduced on pig-iron, etc., as had been previously ordered to take effect August 15. The feeling is general that such a reduction is due this district as a matter of right, and that it will be made effective.

The old material market is also very quiet, and very little business is being done in this line. The purchase of 1000 tons of steel scrap is reported by one dealer at bargain price, while No. 1 machinery scrap is in good demand and finds ready sales at prices equal to low-grade pig-iron.

The feeling with the furnace people generally is that the demand for pig-iron will increase greatly during the next few months, and while the stocks are large, yet their equipments are being all put in best condition and only waiting demand, when a greatly-increased production could be effected.

The demand for increased tonnage by the local consumers is quite noticeable. The American Cast Iron Pipe Co. is operating its plant on full capacity and

shipping the product as quickly as manufactured. The price of pipe is very low, yet there are many sales being made. The United States Cast Iron Pipe & Foundry Co. is reported making shipment of 2300 tons of pipe or near that amount to Casper, Wyo. Pipe is being shipped out in all directions from the district, the Central Foundry Co. having shipped some 24 carload lots of water pipe during the week. There is heavy inquiry for cast-iron pipe, and belief is expressed that there will be consummations of some of the large orders soon.

The National Cast Iron Pipe Co. has completed the second pit, which now gives it capacity of 100 tons per day. This plant is designed for four pits, and these pits are available for service as fast as the molds are complete. The two remaining pits will be operated as soon as the metal can be taken care of.

It is understood that authentic statement was made Saturday that the Southern Railway had increased its recent order of 10,000 tons of rails placed with the Tennessee Company, to be rolled at Ensley, Ala., to 29,000 tons. There is a better feeling noted with the steel manufacturers. The proposed enlargement of the rolling mills at Bessemer, Ala., by the Tennessee Company will begin as soon as material can be assembled on the grounds. It is the intention to be able to meet all demands for steel that may be presented. It has been announced that the Alabama Power Co. was now furnishing the Birmingham Railway, Light & Power Co. electricity from its plant at Lock 12, on the Coosa River, and that transformers had been delivered for the cement plant at Ragland, in St. Clair county, which will be installed as quickly as possible, that by the end of the week electricity from Lock 12 will be used in the operation of this plant.

Real activity exists in both the coal and coke industries, and large tonnages are the daily output.

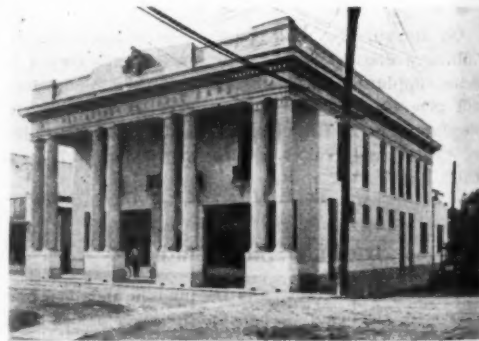
L. Quesada of Havana, Cuba, a prominent iron broker, was in Birmingham this week to confer with local brokers relative to the business outlook, and will probably make some connections for the sale of local products other than those already handled by his firm in Havana. Mr. Quesada was the guest at the Newspaper Club, of Horace Hammond, William Byrd and Morris Bush of Hammond, Byrd & Co.

Pascagoula National Bank.

[Special Correspondence Manufacturers Record.]

Pascagoula, Miss., July 17.

On July 1 the Pascagoula National Bank moved into its new brick building, a photograph of which accompanies this article. The building is two stories high, and is just across the street from the Louisville & Nashville Railroad depot. The Pascagoula National Bank



NATIONAL BANK AT PASCAGOULA.

is a branch of the Moss Point Bank, it having a large and handsome building of its own in that city. The president is Mr. H. C. Herring of Moss Point, who is also the organizer of the bank, and the other directors are A. F. Dantzer, A. M. Cowan, J. A. Griffin and J. Bounds of Moss Point; R. A. Fornsworth, W. B. Kell, W. H. Ladnier and F. L. Clinton of Pascagoula. The architect of the buildings is Mr. Wm. Drago of New Orleans, La.

In the Interest of the Fertilizer Industry

[Special Correspondence Manufacturers Record.]

Hot Springs, Va., July 20.

The convention held in this place last week by the National Fertilizer Association proved to be one of the most interesting and successful ever held by that organization. The attendance was large, the surroundings ideal, the discussions luminous, and the progress shown in the work undertaken by the various committees satisfactory in every respect, so that there was really nothing about the entire meeting to encourage the pessimist or darken the optimist's hopeful outlook.

The first meeting of the association was called to order by President C. F. Burroughs in the big ballroom of the Homestead Hotel at 10 o'clock Wednesday morning, with a very full attendance. As it had been agreed that this was not to be a speech-making meeting to any very great extent, there was no formal welcoming address, and therefore no response. President Burroughs' annual address was, therefore, the first of the meeting, and was as follows:

"The fertilizer industry represents one of the enterprises of first importance and magnitude of this country. With the constant depletion of the natural fertility of soils as a result of continued cultivation, the use of commercial fertilizers has reached the point of necessity, and as time goes on will become an indispensable factor in our agricultural life, if the United States fittingly meets the demands of its people and measures up to its responsibilities as an agricultural and food-producing nation. Up to this time we as a country have enjoyed a tremendous advantage in respect of our more important crop yields because of the cultivation hitherto of relatively virgin soils. This advantage is rapidly disappearing. Intensive cultivation of the soil comes inevitably with the lapse of time, and the large use of commercial fertilizers is one of the prime factors in any successful system of intensive cultivation. In order to realize that this principle has come to be recognized in many sections of this country, it is only necessary to refer to the rapidly-increasing use and application of fertilizers to some of our important crops.

"Let us consider briefly, but in a general way, the effect of the use of fertilizer upon the cotton crop. About half of the fertilizer production of this country is consumed in the States of North Carolina, South Carolina and Georgia, all large producers of cotton. Reliable statistics show that the average yield per acre of cotton has increased substantially in the proportion as the use of fertilizer has increased. Take the last 20 years in those three important States as a basis for illustration: North Carolina's cotton yield per acre has during that time increased from 182 to 315 pounds; South Carolina from 170 to 280 pounds, and Georgia from 156 to 240 pounds. North Carolina consumes, in round figures, 900,000 tons of fertilizer; South Carolina slightly over 1,000,000 tons, and Georgia more than 1,250,000 tons per annum. That the increased production of cotton per acre in these States is, in a very large measure, attributable directly to the use of fertilizer no one for a moment doubts or disputes.

"In comparison with this uniform increased production, let us take the States of Texas and Arkansas, with their newer lands. Texas in 1914 consumed, in round figures, but 77,000 tons of fertilizer within a territory almost as large as the States of North Carolina, South Carolina and Georgia combined, and shows a yield of cotton per acre of 145 pounds, as against 188 pounds 20 years ago. Arkansas in 1914 consumed approximately 100,000 tons of fertilizer, and reports a yield of cotton per acre of 175 pounds, as against 208 pounds 20 years ago.

"It was once quite conclusively presumed that corn could not be successfully grown in the State of New Hampshire. It was thought that the seasons were not long enough for the natural period of maturity of the plant. This notion has been effectively dispelled, for that State, by the consistent use of fertilizer, shows a yield of corn per acre surpassing that of the so-called corn-raising States of the country. As a matter of fact, New Hampshire reported for the year 1912 an average yield of 46 bushels of corn per acre, whereas Illinois and Iowa, the two prime producing corn States of the Union, showed in 1912 a production of 40 bushels and 43 bushels per acre, respectively.

"We are told that in the Genesee Valley of New York

the cultivation of wheat was at one time practically abandoned because of the continued ravages of the Hessian fly. This has been quite effectively overcome by the application of fertilizer in hastening the growth of the wheat plant to a point of maturity where it is not materially affected when the period of visitation for the Hessian fly arrives.

"In Aroostock county, Maine, 300 bushels of potatoes to the acre are annually produced, as against 92 bushels in the Middle West. This wonderful production of potatoes is due entirely to the extensive use of fertilizer, there being about 60,000 tons consumed each year in Aroostock county.

"To follow these crops to their ultimate ends is but to appreciate that, in its last analysis, the fertilizer industry is an indispensable part of the agricultural life of America.

"In all western countries (the United States included) there is a constantly-increasing tendency toward the movement of population from the country to the cities, and the problem of whether it is possible to arrest this movement is engaging the serious thought of many profound students of sociological conditions. As a result of this condition, the cities are constantly drawing heavily upon the country for all classes of its citizens, particularly the young, thus unduly depleting the labor needed in agricultural pursuits. Not only is labor less available in the country than it was 15 or 20 years ago, but it is notoriously less efficient. This condition has had, is now having, and will continue to have with increased force, a direct influence upon the production of our primal crops. The average farmer, in consequence of this condition, and others with which he has to deal, cannot be expected to increase the number of acres that he cultivates. His recourse lies in producing more per acre, and thereby rendering the labor expended more valuable to him by giving it a higher return. In this situation the importance of the fertilizer industry becomes at once apparent.

"Here I believe it pertinent to suggest, if not inquire, whether as a matter of fact the importance of the fertilizer industry, with all it involves, is sufficiently appreciated by those in particular now engaged in it, and our citizens as a whole generally. From the most reliable statistics available we find that there is at present invested in fertilizer manufacturing plants \$125,000,000. This compares with \$60,000,000 in 1900. The industry employs in the operation of its various establishments at least 30,000 people. Again, there was consumed in the United States in the year 1913 approximately 7,000,000 tons of fertilizer, compared with 2,000,000 in 1900. These figures give us an idea of the rapid expansion that has taken place in the industry during this period. I want to suggest, however, by way of emphasizing the importance of the fertilizer industry to the country, that the 7,000,000 tons of fertilizer sold and consumed in the United States in 1913 means, because of its direct effect upon and relation to other branches of industry, much more than the mere value of that product, although the value perhaps exceeded \$150,000,000.

"Just how many more million bales of cotton the use of fertilizer gave to the United States in 1913, or how many more bushels of corn, wheat and potatoes, pounds of tobacco, crates of fruit and other articles of production unnecessary to mention, may not be a demonstrable fact, but that the use of that 7,000,000 tons of fertilizer was the prime cause of some definite increase of production, I fancy no intelligent and unprejudiced mind will question. It is the aggregate in hundreds of millions of dollars that this increased production represents that means so much to our people and our business life. It helped every household consumer in the way of food and clothing; it gave increased traffic to the railroads to the extent of thousands upon thousands of tons, and we alone paid them last year to transport our products more than \$30,000,000; it afforded the banks of this country a security to their fundamental basis of credit, which would have otherwise been curtailed to an extent that no one can accurately measure. This enlarged production gave the country its balance of trade, which, in turn, so largely determines its position among the nations of the world. Our industry has extended in the Southern States alone during the year

1914 a credit of not less than \$80,000,000. This credit is pyramided upon, and soundly so, in an economic sense, by the bank, the merchant, the wholesaler, the railroads and every other enterprise depending ultimately upon the products of the soil for their debt-paying power. In fine, it involves the whole economic, industrial, financial and social condition of our people.

"May I here be not misunderstood when I, with all respect, inquire—and I leave it to every member of this convention to answer to and for himself—do we, as the representatives of this great enterprise, fully appreciate the responsibilities that devolve upon us as individuals? Can anyone truly appreciate the real value of the service which we are performing and rendering unto our country and the part we are playing in an industrial way, and not be stimulated in his desire to meet these responsibilities in a befitting manner? The point I am trying to make is that we as individuals are engaged in and represent an enormously valuable and highly important industry not alone to ourselves, but to the country as a whole, and that if we meet the full measure of these responsibilities, we as men must compare with those of every other great industry. There was a time when many people presumed that all that was necessary to engage in the fertilizer business was a certain amount of ambition and no great amount of money. This never was true, but it is farther from the facts now than ever before. On the contrary, the fertilizer business is one which to be successfully conducted must follow along highly scientific and skillful lines. A properly organized fertilizer business calls for the qualities, the arts and the skill of trained engineers, for we must build plants and employ the latest products of the inventor in our machinery and our appliances; chemists, because we are dealing in chemical ingredients and all have our laboratories; we must understand what it means to manufacture a thing in the technical sense by assembling raw materials, transmuting and converting them into a finished product and placing them in the hands of the ultimate consumer, and also employ large numbers of laborers and have the knowledge of how to handle them; we must be merchants, because we must know, too, when and what to buy in world-wide markets, and how to sell our product by finding a buyer and giving him that which his needs require; we must intelligently study credits to know when to sell and also understand how to collect our money after the sales are made. We have our expensive accounting systems, which are necessary, and which, if properly directed, means higher efficiency. There was a time when business could be successfully conducted with a small accounting force under a simple system, but business at that time was purely of a local character; there were not then the large manufacturing plants we have today, neither were those the days of keen competition, such as at present, and competition of necessity demands that every item of expense be scrutinized and all possible sources of leaks watched in order that every article shall bear its essential and proper share of the burden of the business. Cost must in the end determine the price in all business, and the price must carry a living profit if the business is to continue. Without a correct understanding and knowledge of costs there is no means of ascertaining the profit.

"I have unbounded faith in the future of the fertilizer industry, and I have that confidence in the men who are conducting its affairs to assure me that they are equal to their tasks when the crucial periods arrive. It therefore behooves me to suggest that we all take stock, as it were, and fully acquaint ourselves with the different phases of our business, so that the fertilizer industry may maintain its position as one of the great enterprises of this nation."

The reading of President Burroughs' address was given close attention, and its most salient points aroused considerable applause, which was general and continued at its close.

A number of interesting reports were made by the standing committees, among them being one from the Middle States Soil Improvement Committee, read by Professor Bell, the committee's agronomist. The report dwelt at length upon various phases of the work done under the direction of the committee in teaching the necessity of the use of fertilizers on the soils of the Middle West, formerly of such unsurpassed fertility that their owners were accustomed to regard them as beyond the need of enrichment by artificial means. The report showed that the work done had resulted in the

use of a largely-increased amount of fertilizer and a greatly enlarged yield per acre under such system.

At the conclusion of the reading of this report George Braden, president of the Federal Chemical Co. of Louisville, Ky., made a short speech, in which he said the work accomplished by the Middle West Soil Improvement Committee was probably the most important of the National Fertilizer Association's accomplishments.

The educational committee briefly reported the progress made in spreading fertilizer propaganda throughout the country, and the farm credits committee likewise made a brief report of the progress being made in its line of work.

An elaborate report from the insurance committee showed how savings of many thousands of dollars had been made for members who sought the aid of the committee in placing their insurance, in lower rates and pro rata cancellations, while the expert advice secured had also resulted in safer and better contracts.

There was some discussion of this report, the consensus of opinion expressed being to the effect that proper co-operation with the committee would be of great advantage in reducing premiums, getting better policies and more satisfactory settlements in cases of loss. It was suggested also that there should be more fireproof buildings, and a more general division into compartments that would permit of the separation of inflammable materials.

One of the strong papers of the meeting was that read by Pierre Jay, president of the Bank of Manhattan Co., who dealt with the fertilizer business from the standpoint of the banker. This was a most admirable address, showing in a practical way the interest of the banker in a matter of such vital importance to the general welfare of the country, and pointing out the fact that the banker ought to be, and is, interested in the fullest possible development of the fertilizer business. The applause which followed the reading of Mr. Jay's paper attested the interest it had aroused, and the general approval of those who heard it.

At the second day's meeting George Braden's very strong paper on the fallacies of co-operation in the fertilizer business (printed in the MANUFACTURERS RECORD of July 16) was read by its author. This paper was received with every demonstration of approval, and from the remarks of speakers who followed, and of many members who expressed themselves in private, struck a responsive chord in the bosoms of a large majority of members.

Col. J. Rice Smith of Augusta, Ga., followed Mr. Braden in a very strong speech, in which he heartily commended what that gentlemen had said and waxed eloquent over the necessity for the farmer to stick to the men who are helping him in a safe, business way, rather than to be led astray by those who are always seeing in the efforts of others an attempt to rob the tiller of the soil.

Hon. Reuben F. Kolb, Commissioner of Agriculture of Alabama, made an instructive speech on the general phases of agriculture and the relation of fertilizer to the prosperity of the farmer and the country.

F. C. Belser, manager of a St. Louis firm of accountants, made an instructive and interesting address on the necessity of a proper system of cost accounting and the keeping of accurate accounts of all minor details entering into the conducting of the fertilizer business. This was considered by those in the business as one of the most valuable speeches of the meeting, as it dealt with a subject of vital moment in the carrying on of successful business.

The officers chosen for the ensuing year were: President, Gustav Jarecki, Cincinnati, O.; vice-president, George Braden, Louisville, Ky.; treasurer, C. H. Dempwolf, York, Pa.; secretary, W. G. Sadler, Nashville, Tenn.

Invitations for the association to hold its next meeting in their cities were received from officials in Chicago, San Francisco and other places, but no choice was made, the matter being left to the decision of the executive committee.

I stated in my report of last week that the Southern Fertilizer Association would probably be dissolved and the work of its important Southern Soil Improvement Committee be conducted hereafter under the auspices of the National Fertilizer Association; but it now appears doubtful whether that program will be carried out. The committee appointed to consider the matter reported in favor of that course, and at first it seemed certain that the report would be adopted, but at a later

meeting strong opposition developed, and the matter was left to the meeting of the association in October for final decision.

Meantime the work of the Soil Improvement Committee will go on as before. This committee has accomplished a great deal of good in the opinion of members who expressed themselves to me, and while the work done by the Middle West Soil Improvement Committee under the auspices of the national body has been entirely satisfactory, there is a feeling that a winning combination should not be broken up, and therefore it will not be without a struggle that a majority of the membership of the Southern association will be found voting to surrender its identity in a merger with the larger organization.

Meetings of the Middle West Soil Improvement Committee of the national organization were held on Friday and Saturday, but they were not open to the public, and nothing of their proceedings were given out beyond the fact that the work of educating the farmers of the territory in which the committee is interested will be carried on more vigorously than ever before.

GEO. BYRNE.

Six Months of Southern Building.

In its issue of July 9 the MANUFACTURERS RECORD presented a summary of Southern and Southwestern building operations from January 1 to June 30, inclusive, of the present year, as indicated by the permits issued in a number of representative cities, with the estimated cost of construction. Supplementing that summary, the following figures are interesting: In Kansas City, Mo., a total of 1849 permits was issued, representing a cost of construction of \$7,001,875. The number of permits, with the estimated cost of construction, by months were: January, 210 permits, \$884,265; February, 208 permits, \$1,053,950; March, 423 permits, \$1,516,380; April, 354 permits, \$736,665; May, 332 permits, \$1,177,915; June, 322 permits, \$1,632,700. Permits were issued in Atlanta for six months representing a cost of construction of \$2,954,832. January's construction was estimated at \$322,965; February, \$335,391; March, \$561,644; April, \$522,879; May, \$732,209; June, \$419,654. The value of operations in Macon for six months was estimated at \$428,716. A total of 27 permits was issued from January 1 to February 17, representing a cost of construction of \$17,496; 64 permits were issued from February 17 to March 17, representing a cost of construction of \$40,485; March 17 to April 17, 49 permits, \$83,623; April 17 to May 31, 84 permits, \$112,078; June, 77 permits, \$172,034. Permits were issued in Augusta for six months to a value of \$739,045, distributed as follows: January, \$95,543; February, \$411,972; March, \$30,105; April, \$102,199; May, \$21,522; June, \$77,704. The value of operations in Memphis was estimated at \$2,014,937, with 226 permits for January, representing a cost of construction of \$361,390; February, 232 permits, \$275,455; March, 279 permits, \$370,300; April, 288 permits, \$420,085; May, 332 permits, \$304,095; June, 252 permits, \$283,012. In Tulsa, Okla., the cost of construction for which permits were issued from January 1 to June 30, inclusive, was estimated at \$1,120,944, distributed as follows: January, \$153,249; February, \$104,970; March, \$218,540; April, \$327,575; May, \$105,600; June, \$210,950. The cost of construction for which permits were issued in Oklahoma City during the six months was estimated at \$285,242, distributed as follows: January, \$10,555; February, \$12,235; March, \$161,875; April, \$35,825; May, \$28,162; June, \$36,590. The estimated cost of construction in Fort Worth for the six months ended June 30 was \$1,325,360, distributed as follows: January, \$179,265; February, \$243,000; March, \$193,290; April, \$214,050; May, \$215,520; June, \$180,175. During the first six months of the year there were no heavy improvements noted in El Paso, Tex., dwellings, apartment-houses, tenements and repairs constituting the bulk of building construction. The value of operations is estimated at \$1,040,982, distributed as follows: January, \$149,915; February, \$143,182; March, \$248,960; April, \$229,335; May, \$123,245; June, \$146,375. Building conditions in Dallas are good, and prospects are bright. The value of construction for the ensuing six months will greatly exceed that of the corresponding period last year. The total cost of construction for which permits were issued from January 1 to June 30, inclusive, of this year was estimated

at \$3,793,448, distributed as follows: January, \$727,635; February, \$564,220; March, \$807,213; April, \$565,335; May, \$540,100; June, \$588,945. A total of 202 permits was issued in Austin for the first six months of this year, representing a cost of construction of \$468,005. Building activity in Charleston, W. Va., is considered better than at any period in its history. The city is building rapidly, and the class of structures being erected is far better than have ever before been erected, a number of steel buildings now being in course of construction. The total cost of construction for which permits were issued from January 1 to June 30, inclusive, was estimated at \$545,000, distributed as follows: January, \$60,000; February, \$55,000; March, \$60,000; April, \$105,000; May, \$85,000; June, \$180,000. The value of operations in Roanoke, Va., was estimated at \$701,970 for six months, an increase of nearly \$110,000 over the corresponding period last year. A total of 44 permits was issued in January, representing a cost of construction of \$56,640; February, 35 permits, \$43,490; March, 46 permits, \$83,845; April, 83 permits, \$173,665; May, 66 permits, \$69,385; June, 47 permits, \$274,945. In Asheville, N. C., the value of operations was estimated at \$517,917, distributed as follows: January, \$36,665; February, \$67,012; March, \$145,380; April, \$84,791; May, \$113,474; June, \$70,595.

Oklahoma Coal in 1913.

Coal was mined in Oklahoma in 1913 to the amount of 4,165,770 short tons, valued at \$8,542,748, both record-breaking totals for the State, according to figures compiled by E. W. Parker of the United States Geological Survey, in co-operation with the Oklahoma Geological Survey.

Oklahoma, more than any other of the coal-producing States in the Mississippi Valley and the Rocky Mountain region, was benefited by the labor troubles in Colorado, as is shown by the increase in production over 1912, amounting to 490,352 tons, or 13.34 per cent. The value of the product increased \$675,417, or 8.6 per cent. The smaller relative gain in value in 1913 was due to the fact that in 1912 prices were somewhat inflated because of the rather abrupt withdrawal of fuel oil from the markets where it had been in competition with Oklahoma coal and to a diminution in the supply of natural gas from the northern part of the Mid-Continent field, particularly in Kansas. The deficiency in the Kansas production of natural gas is being made up, however, by developments in Oklahoma, and the result of these developments and of the fact that the supply of coal is catching up with the demand on account of the increased production in 1913 is exhibited in the return to lower prices, the average value per ton in 1913 being the same as in 1911.

Meat from Tasmania.

Bearing upon the plan for a Government-backed refrigerating and cold-storage plant in Tasmania, United States Consul George M. Hanson, at Hobart, writes to Daily Consular and Trade Reports:

"The necessary bill empowering the loan of \$125,000, if necessary, has been passed by Parliament, with \$50,000 immediately available under the conditions stated. This action may be taken as an indication of how the Government officials view the possibilities of trade with the United States after the Panama Canal is in operation. Tasmania hopes to participate in the frozen meat trade with America in much the same way as that trade is now carried on between New Zealand and England. There are also possibilities in the butter and egg trade, which, however, could not be developed into a permanent certainty without the aid of cold storage. Work on the plant has already begun."

Wants to Represent Manufacturers.

Manufacturers of mechanical equipment are invited to correspond with Wm. Walker Jones, 510 Tucker Building, Raleigh, N. C., relative to representation. Mr. Jones wants to add to his present offerings such products as will be appropriate to sell in connection with wood and iron-working machinery, engines, boilers, logging cars, railway and mill supplies, etc.

Louisiana Invites Foreign Capital

By S. A. TRUFANT of New Orleans.

House Bill No. 91, joint resolution of the Louisiana Legislature, proposes an amendment to the Constitution of the State of Louisiana with reference to taxation of banks, banking associations, corporations or companies doing business in this State but domiciled in other States of the Union or in foreign countries, and providing for the extent and limitation of taxation thereof. Under this amendment to the Constitution, banks, banking associations domiciled in other States of the Union or in foreign countries are permitted to do business in this State in their own name or through an agent—lending money or dealing in bills of exchange, and the limitation of taxation is fixed under this proposed amendment as follows:

"Shall pay a yearly license tax of \$250 to the State and like tax to the municipal or parochial corporation, and in addition to said license tax shall pay to the State an annual tax of 2½ per cent. on the gross interest earned on all money loaned, and to the municipal or parochial corporation a like tax of 2½ per cent., and shall be subject to no other or further taxation either by the State or by any political subdivision thereof."

House Bill No. 49 proposes an amendment to the Constitution of the State of Louisiana relative to the exemption from taxation of money in hand or on deposit or of loans by homestead associations or homestead societies to their members secured by stock of said associations or societies. Under this proposed amendment, "there shall be exempt from taxation all money in hand or on deposit or of loans by homestead associations or homestead societies to their members secured by stock of said associations or societies."

These two very important pieces of constructive legislation will go before the people of the State of Louisiana for ratification on the first Tuesday after the first Monday in November.

These two proposed amendments go hand in hand as an invitation from the State of Louisiana to foreign capital to come back into the State just at the psychological moment when, by reason of the reduction of the tariff on sugar, the sugar industry of the State has been seriously crippled.

The reduction of the tariff on sugar to one cent duty for two years only, and the certainty of free sugar at the end of two years, say, the first of May, 1916, means that only those who have means of their own can continue the production of sugar on a starvation basis, with the absolute certainty that the industry must be wiped out when sugar goes on the free list.

Sugar lands, the best thoroughly drained, cultivable lands, which were valued at \$100 to \$150 per acre only a few years ago, are today a drug on the market at \$50 to \$60 per acre.

The reason for this is simply the lack of capital. Many of these plantations are mortgaged on the basis of \$40 or \$50 an acre for the best land in the State, and will have to be foreclosed.

Many of these properties are without any mortgage, but the owners find it impossible to borrow the money necessary to put them into stock farms, raise corn (which is a very profitable crop in this State), potatoes and truck. If the farmer is not prosperous the country cannot become so.

We have an abundance of skilled labor with which to work the lands, and the productiveness of these Louisiana lands is recognized and certified to by land experts as being under our climatic conditions entirely capable of producing two or three crops within the 12 months.

The enforced abandonment of sugar as a crop in this State will unquestionably demonstrate that these same lands will become greater money producers cut up into farms and cattle ranges.

In Louisiana, cattle and hogs feed all the year round "in the open," and the native grasses afford sufficient nourishment, while alfalfa, lespedesa and timothy hay are successfully grown.

To establish the value on these discarded sugar lands it is absolutely necessary that new capital should be brought into the State to be loaned on farm mortgages upon terms which will permit the development which is necessary to the future prosperity of the State.

The prosperous Western farmer is discouraged when he cannot find capital ready and willing to carry the mortgage on these lands for 50 per cent. of what he is willing to pay for the lands. One of the Western men said the other day:

"I am willing to buy your lands at the price you are offering to sell them and pay 50 per cent. cash on the purchase price, but I want you people to find me an investment company or mortgage loan company which will carry the other 50 per cent. of the purchase price on a farm mortgage in 10 equal payments, with interest at 6 per cent., interest payable annually. First payment to become due in five years, and annually thereafter not less than one-tenth of the mortgage shall be paid. Then I would have money enough left to stock my farm, keep up the fences and ditches, build better quarters for my help, with the absolute certainty of having five years in which to develop the property and take care of the mortgage."

I don't think there is any doubt but what people in Louisiana will vote in favor of these amendments to the Constitution, and I am equally certain that capital can be under the State laws invested with entire safety in such farm mortgages bearing 6, 7 and 8 per cent.

Up to about 10 years ago the Canadian Bank of Commerce and the Comptoire Des Escompte Nationale De Paris maintained agencies in New Orleans doing a large foreign exchange business and conducting a loan department which greatly facilitated the business of the port. Through an unfortunate decision of the Supreme Court the tax assessors' requirements became burdensome to foreign capital and they withdrew.

Aside from the great possibilities for foreign capital in farm loans, the greater importance of New Orleans as a port of export and import will undoubtedly attract foreign capital to establish agencies in New Orleans for making loans on cotton, coffee and other produce and handling foreign exchange.

New Orleans will be the great export terminal for the Gould lines, the Illinois Central and the Southern Railway, which has but recently acquired the entire control of the terminals formerly owned jointly by the Southern Railway and the Frisco lines.

The Hamburg-American Line will inaugurate in September direct steamship service to the West Indies and the north coast of South America.

Regular fortnightly sailings which will open up a rare opportunity for the Mississippi Valley in direct trade with the West Indies, Venezuela and Columbia.

Norton, Lilly & Co. advertise the Atlantic-Gulf-Far-East Line monthly service between South Atlantic Gulf ports and the Far East, China, Japan, etc.

W. R. Grace & Co. also announce to operate a steamship line from New Orleans to the west coast of South America, and it is generally understood that the Japanese steamship lines have decided to enter this port with the opening of the Panama Canal.

Will you kindly endeavor to impress upon capital the following from a recognized authority on farm loans:

"The bone, muscle and brain of the farmer is valueless until brought in contact with the land; likewise the land in itself is comparatively worthless until cultivated by the farmer. The union of the two creates a wealth that did not exist before, and the more extensively this union exists the greater the prosperity of the country. All other occupations manipulate the wealth which the farmer creates."

A New Type of By-Product Coke Plant.

The Carnegie Steel Co., a subsidiary of the United States Steel Corporation, has placed an order through Bagley, Mills & Co., New York, American representatives of the Carl Still of Recklinghausen, for the construction of a benzol plant at Farrell. This type of benzol recovery and refining plant, it is claimed, marks a new departure in by-product recovery in conjunction with the production of coke in this country, though in Europe it is quite generally used by a number of leading concerns, including, among others, the German Government Mines Department, Krupp, Bolckow, Vaughan & Co., the Workington Iron & Steel Co., and others.

IRON AND STEEL INSTITUTE.

Interest of Members in Its Meeting at Birmingham in the Fall.

Since the publication in last week's issue of the MANUFACTURERS RECORD of three pages of letters from members of the American Iron and Steel Institute bearing upon the fall meeting of the Institute at Birmingham, Ala., other letters have been received emphasizing the interest in the meeting in the South on the part of representative members of the body which stands for the leading industry of this country. The additional letters follow.

W. H. Abbott.

W. H. Abbott, secretary, Wheeling Corrugating Co., Wheeling, W. Va.:

"I expect to attend the meeting of the American Iron and Steel Institute in Birmingham, Ala., next October. I agree that a visit to this important Southern city will be interesting and beneficial."

Brooke Anderson.

Brooke Anderson, sales department, American Steel & Wire Co., Chicago:

"I hardly believe it will be possible for me to attend the meeting of the Institute at Birmingham, Ala. However, if I am so lucky to be able to make this trip, I know that Birmingham will be a place of great interest because of its intimate connection with the iron and steel industry."

C. L. Close.

C. L. Close, United States Steel Corporation:

"It looks as though I would be unable to attend. Am sure than all those who have never been in the South will be surprised at the development of our 'sunny territory.'"

W. H. Donner.

W. H. Donner, president, Cambria Steel Co., Philadelphia:

"I look forward with great pleasure to the October meeting of the Iron and Steel Institute. I am deeply interested in the steel business as an American industry, and am anxious to become more familiar with the Birmingham district."

H. S. Durand.

H. S. Durand, sales department, American Steel & Wire Co., Chicago:

"I am unable to state definitely at the present time whether I shall be present at this meeting or not. Naturally, the American Steel & Wire Co. is deeply interested in the South because of the rapid onward movement in that section, and particularly because of the recent opening of its large plant in Birmingham. This plant, which is one of the largest and most complete wire plants in the world, is evidence of the confidence this company feels in the future of the South."

H. J. Freyn.

H. J. Freyn, third vice-president, H. Koppers Company, by-product coke and gas-oven plants, Chicago:

"I anticipate attending the Birmingham meeting. My company is greatly interested in the development of the by-product coke-oven industry in the South."

Charles M. Gunn.

Charles M. Gunn, manager, Columbia Steel Co., San Francisco, Cal.:

"We would like very much to attend the October meeting of the American Iron and Steel Institute at Birmingham, but with conditions as they are now, and Birmingham so far away from San Francisco, we cannot give ourselves that pleasure, notwithstanding the amount of education and information to be dispensed on that occasion."

H. L. Kaufman.

H. L. Kaufman, assistant general manager, E. N. Breitung & Co., Cleveland, O.; Mary Charlotte Mining Co., etc., Marquette, Mich.:

"The writer is very much interested in attending the meeting of the American Iron and Steel Institute, to be held in Birmingham, Ala., in October. He feels that this meeting should be of unusual interest to the members of the Institute, and will personally try to attend, if possible."

Jonathan R. Jones.

Jonathan R. Jones, vice-president and treasurer, Alan Wood Iron & Steel Co., Philadelphia:

"One or more of the members of this company will

attend this meeting, and, being the first visit to this section of the country, we anticipate a great deal of pleasure in viewing the development of the iron and steel business in the South. Of course, we have read in the papers and have heard from various sources of this wonderful section, and have no doubt but what our impressions will be more than fully realized."

E. L. Messler.

E. L. Messler, Riter-Conley Manufacturing Co., Pittsburgh, Pa.:

"I certainly hope to be able to arrange to attend the Birmingham meeting of the American Iron and Steel Institute, as I have never seen anything of the industries of the South, although I have heard quite a little of them through Chas. McCurry, now deceased, and Geo. Crawford, both of whom I knew well. With the increasing development which has taken place in the last decade I believe even greater will take place in each succeeding one, as the South is really only just beginning to recover from the full effects of the war and to really find itself. The stamping out of the hookworm will increase the value of the labor and add just so much to the wealth of this section."

Wm. A. Rogers.

Wm. A. Rogers, Rogers, Brown & Co., pig-iron and coke, Buffalo, N. Y.:

"I expect to attend the meeting at Birmingham of the American Iron and Steel Institute this fall. A visit to that center of progress and industrial activity is always interesting. Its growth is one of several examples of the marvelous development of the iron and steel industry in this country. My business life spans the history of the place from the time when it was a small mosquito-infested railroad hamlet to its present stately period of fine stores, skyscrapers, beautiful residences and great manufacturing plants. As one who was identified with the beginnings of the coke-iron industry of the South, and who sold the first pig-iron shipped by the company which now calls itself the Tennessee Coal, Iron & Railroad Co., the contrast is interesting and inspiring."

F. N. Speller.

F. N. Speller, metallurgical engineer, National Tube Co., Pittsburgh, Pa.:

"Regarding the proposed meeting of the American Iron and Steel Institute in the South, we feel it would be of very great importance to the iron and steel industry in that region and should be instructive to all who attend."

W. Sykes.

W. Sykes, Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa.:

"I believe it would be an excellent opportunity to arouse enthusiasm in the Southern district for the work of the Iron and Steel Institute to hold the October meeting in Birmingham. The fact that the men operating the plants are brought into contact with leaders of their district cannot help but be an advantage to all concerned. I am not sure whether I will be able to attend this meeting, but if possible I will do so."

E. M. Tewkesbury.

E. M. Tewkesbury, general superintendent, the South Buffalo Railway Co., Buffalo, N. Y.:

"I regret very much that other plans will prevent my attending this meeting. It was my pleasure last December while en route north to pass through Birmingham, and it was my good fortune to meet on the train a very talented and courteous gentleman, a resident of that city, who gave me a description of the location of the different interests, including manufacturing and mineral deposits, pointing out the growth of the city, and, in fact, created a desire on my part to see and know more of the wonderful resources and possibilities of that vicinity. I am sure the coming meeting of the Institute will be one of the greatest interests to a very large number of the members who have not had the opportunity and privilege of visiting Birmingham. Surely there would be no better way of gaining knowledge than by going on this trip of the Institute, therefore my regrets that I will not be able to be one of the party."

Geo. M. Verity.

Geo. M. Verity, president, the American Rolling Mill Co., Middletown, O.:

"I feel that your interest in the development of the South is very opportune, and that you have very aptly expressed the real situation when you refer to the South as 'a region of almost illimitable possibilities in every line of human activity, industrial and agricultural. The

development of the South means added prosperity to all the nation, and it behooves the business men of the day to become better posted in regard to every section of this great country of ours. The holding of a regular meeting of our great iron and steel Institute is certainly a move in the right direction, and we are expecting to take advantage of the opportunity to be present."

S. T. Wellman.

S. T. Wellman, 8803 Euclid avenue, Cleveland, O.:

"I cannot tell if I can get to the October meeting in Birmingham, but if possible I will be there. I am much interested in the future of the iron business of the South, and have no doubt it will grow to be an enormous factor in increasing the wealth of the whole country, as well as the South. By using the improved methods that are constantly being developed the iron manufacturers down there are going to be able to make the cheapest iron and steel in the world. Nowhere else that I know of can you stand on top of a blast furnace and see the coal, iron ore and limestone that is being used."

Women in Fig Preserving Industry.

[Special Correspondence Manufacturers Record.]

Pascagoula, Miss., July 17.

The Home Preserving Co. of this city, which is an organization of ladies, began its work in its new quarters, two blocks from the Louisville & Nashville Railroad depot. The company's principal work is the preserving of figs (not canned figs, which are very different), and for this purpose the factory is built in the midst of one of the largest fig orchards in this section. The figs are taken right from the trees and carried to the kettle, where they are made into preserves. The only material used is pure artesian water and granulated sugar. The figs are put up in glass jars, with airtight metal tops, and in pints, half pints and "individuals," the latter holding one gill. Some of the figs are flavored by adding a slice of a raw lemon and others with spices, and all the work is done by ladies. The kettles are so arranged that they can be easily moved over onto table without any lifting and then replenished and slid back to their furnaces. The preserved fig is a favorite among epicures. A short time ago the writer received from a hotel in Texas a letter asking where the proprietor could find the preserved fig for his hotel, he having eaten them while on a visit to Pascagoula. The letter was turned over to the company, and already a good trade has opened up. The raw fig will not stand shipment to any distance, and must be canned or preserved on the spot, and the Home Preserving Co. putting its factory in the orchard marks a step in the evolution of industry "carrying the factory to the raw material instead of shipping the raw material, with heavy losses from freight charges and waste, to the factory."

CHAS. E. CHIDSEY.

Proposes to Develop 18,000 Horse-Power.

The Santee-Cooper River Development Co., formed by George R. Fishburne and others of Charleston, S. C., is endeavoring to obtain Government permission to construct a submerged dam to divert one-half of the water of the Santee River into a new channel. This company proposes to provide the new channel by constructing a canal from the Santee River to the Cooper River, the site being about 50 miles above tidewater on the Santee River, with the ultimate purpose of constructing a hydro-electric plant at the Cooper River end of the canal. About 18,000 horse-power is the estimated development for transmission by electricity to Georgetown, Orangeburg, Charleston and other South Carolina cities. Plans contemplate a canal 23 miles long, with a minimum depth of 8 feet and a minimum width of 150 feet.

Maple, Birch and Beech Lumber.

The Jackson Manufacturing Co., Harrisburg, Pa., writes to the MANUFACTURERS RECORD: "We are in the market for several cars of maple, birch and beech lumber sawed to our specifications. This material is to be used in making wooden parts to wheelbarrows, and must be air-seasoned."

Immense Drainage Pumping Plant for Egypt.

While we are carrying on great drainage operations in this country, the extent to which similar work is being done in other lands is indicated by an order for Humphrey pumps, the manufacture of which in this country is controlled by the Humphrey Gas Pump Co. of Syracuse, N. Y., by the Ministry of Public Works of the Egyptian Government for the drainage of Lake Mareotis at Mex, near Alexandria. When completed this plant will be one of the largest pumping installations in the world, and will consist of 18 enormous pumps, each capable of delivering 100,000,000 gallons per day through a lift of 20 feet. The present order includes the first 10 of these pumps, together with the necessary gas-producer plant, Venturi water meters, traveling cranes, locomotive weigh bridge, regulating gates and screens, and a complete gas-driven electric light and power installation.

The following approximate dimensions of the pumps for the Egyptian Government will be of interest:

The maximum internal diameter of the combustion chamber will be 8 feet and its height about 14 feet. The water-valve box will be 8 feet 8 inches diameter and 7 feet high, and will be fitted with 100 valves of the hinge type especially designed to enable any valve to close upon an obstruction, such as a piece of wood, without throwing undue strain on the hinges. The design is such that on the next stroke, when the obstruction has been removed by the rush of water, the valve will automatically readjust its position and close fairly upon its seat. This type of valve is a result of careful experiment, and has proved itself thoroughly satisfactory under test.

All the main castings will be of steel, and will be carried upon a cast-steel bend which connects to the play pipe. This bend will be in two parts, making up the 118.5 inches required to connect with the inclined play pipe.

The pumps will be started by forcing into the combustion chamber a mixture of gas and air which is exploded by means of the usual sparking plug and switch so as to give rise to the first oscillation, after which the working becomes automatic. Compressors capable of rapidly charging the pumps for this purpose, and having separate cylinders for air and gas, are included in the contract.

Five of the pumps will be made by Messrs. Wm. Beardmore & Co., Limited, of Glasgow, and five by Messrs. The Tecnomasio Italiano Brown Boveri at Milan.

The anthracite gas plant, capable of gasifying 44 tons per day, will be of the self-vaporizing type, and will be supplied by the Power Gas Corporation, Limited.

To Construct Causeway in Texas.

Nueces County Commissioners, Corpus Christi, Tex., are inviting bids until August 17 to construct a causeway across Nueces Bay to connect the main lands of Nueces and San Patricio counties. Bonds for \$165,000 have been voted for construction and bonds for \$50,000 to build the San Patricio county approach. This bridge is to be of concrete, 8500 feet long and 65 feet wide, with concrete-steel bridging at Corpus Christi end and a drawbridge span over channel of bay, the remaining distance (about 6000 feet) to be protected by sand fill having 40-foot macadamized roadway on top, with beach slopes of brush mats or baggots. Terrell & Ranney, Fort Worth, are the engineers.

Sewer Construction at Baltimore.

Specifications have been submitted to the Sewerage Commission of Baltimore for constructing 57,000 feet of sanitary sewers in Northwest Baltimore, construction proposals soon to be invited. Engineer Hendricks has reported that between 500 and 600 miles of sanitary and storm-water sewers have been completed, and that about 200 additional miles of sewers will complete the system. It is proposed to provide funds for completion from the \$3,000,000 loan expected to be voted next November. Bids for the sludge from the sewage-disposal plant on Back River will soon be invited, the material to be used for fertilizer purposes.

Fort Worth's Schools Typical of South's Educational Facilities

WITH an annual expenditure for school purposes of \$26 per capita, Fort Worth, Tex., occupies a conspicuous position as a city which values the benefits of adequate school facilities. With a variety of public and denominational schools, Fort Worth is very much of an educational center today, surprisingly so to those who have thought of the city mainly as a cattle town and packing-house center. Truth is, however, that Fort Worth always has paid great attention to her schools.

Fort Worth had scarce grown out of swaddling clothes, as a frontier post, ere the determination was evinced to provide adequate educational facilities. While an army post—1849-1853—there was occasional tuition of the children about the post and those of the settlers in the village hovering under its shelter, when a chaplain was here or when an officer had the time and inclination.

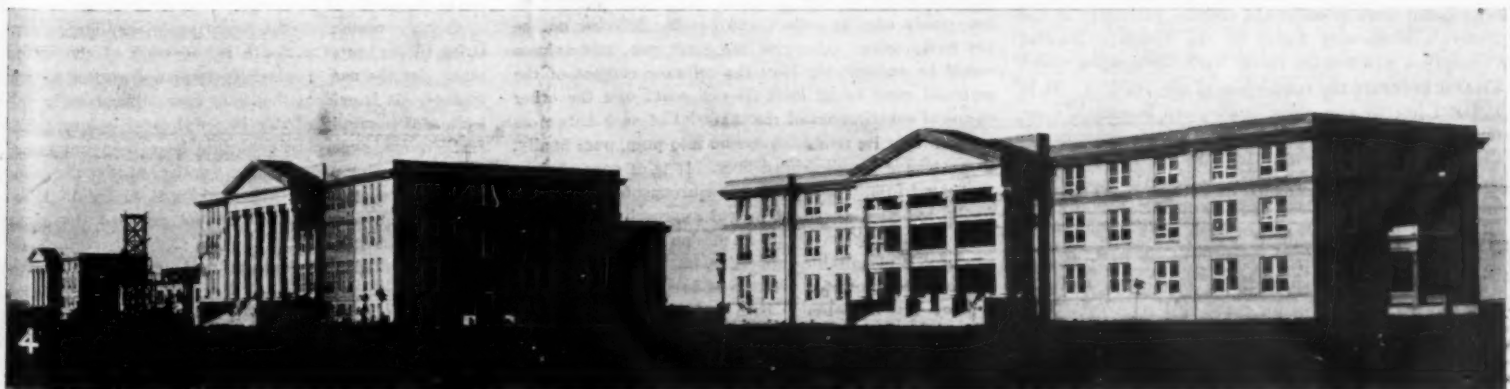
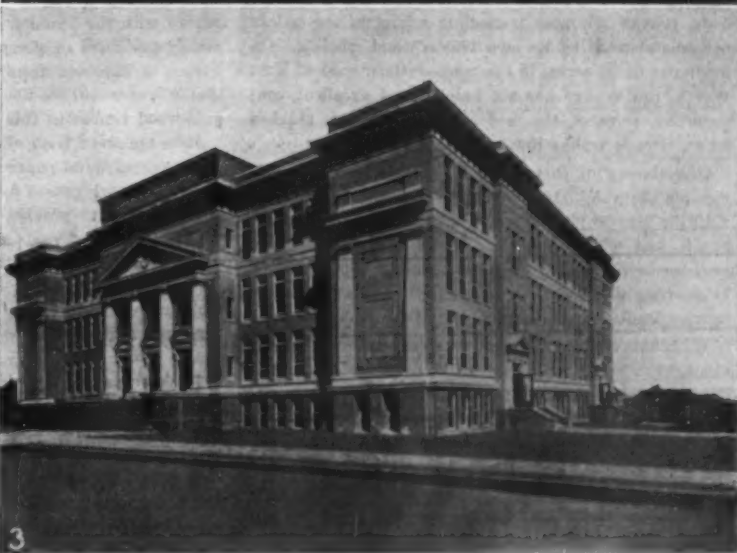
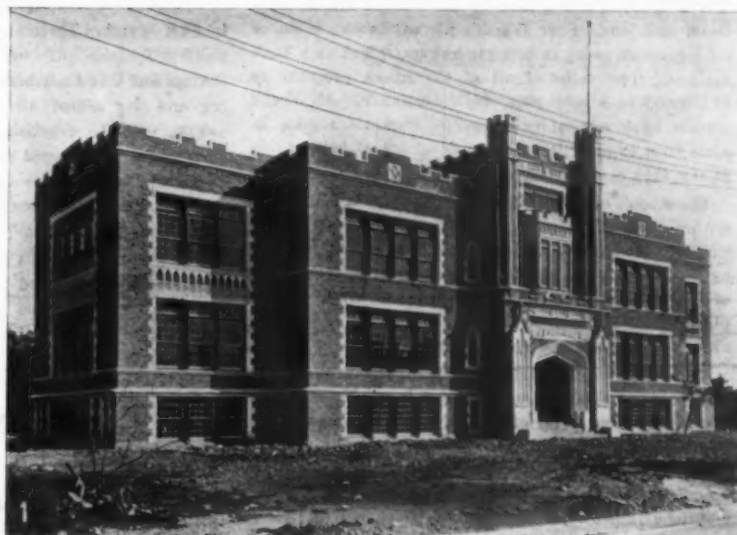
In 1869 John Peter Smith and Addison Clark conducted a private school in the village. Smith soon withdrew from that venture, his place being taken by Randolph Clark, a brother of Addison. In 1873 those brothers moved their school to Thorp's Springs, about 50 miles to the southwest, where they established Add-Ran College, which, after many vicissitudes and several removals, found a home in Waco in 1895, from whence, after a disastrous fire, it was moved to Fort Worth in 1910, and is now, under the name of the Texas Christian University, the most important school of the Disciples of Christ in the Southwest, and one of the leading educational institutions of Texas. Its campus includes 50 acres of ground, on which are already six large buildings, the largest, the administration building, being 200x135 feet in size, four stories high, fireproof, reinforced concrete with brick face, classical style of architecture, as are all of the other buildings. The Brite School of the Bible building is now being erected, to be ready for use when the September term opens. Two other buildings are provided for, and will be in use inside of a year. Because that is really the development of the first organized school in Fort Worth, its history is thus briefly outlined. It now has nearly 900 pupils. That was last term's enrollment. By July 10, over 100 more enrolled for the Brite School of the Bible.

In the latter part of 1913, this institution (the T. C. U., as it is generally known in Texas) absorbed the Fort Worth Medical College, a well-equipped class A medical school, with its own college building in the downtown district. The T. C. U. campus is nearly four miles southwest from the courthouse, which is close to the geographical center of Fort Worth. In the term ending June, 1914, there were 93 students in the medical college, divided between the school of medicine, the school of pharmacy and the school of nursing. Incidentally it may be stated there are three other Fort Worth schools of nursing, attached to other hospitals or sanitariums. The medical college was established in 1894.

In 1877 the first efforts toward the establishment of a system of city public, or free, schools was initiated, but it was found that under the laws of the State there had to be a minimum of 10,000 of population to elevate Fort Worth into a State independent school district. Further action was not taken until 1882, when by a proposition of 17 to 1 the citizens voted the establishment of the city school, that carrying with it the levy of a special tax for the support of the schools. Schools were kept open 10 months of the year. The available school fund for the first year was \$3906 plus the proceeds of the special tax levied. From that time to this day progress has been the watchword of the management of the Fort Worth schools, and now the school equipment includes 28 schools—8 of them for negroes—most of the school buildings being of modern fireproof construction, even the roofs and stairways being of reinforced concrete. Some of the buildings are beautiful, though classically plain as to architecture. The most approved system of lighting, ventilation and heating is in use in each of the modern buildings. Some of the negro schools are equally good and substantial, though perhaps not quite so attractive in looks.

The first year of the public school system there were three wooden buildings and the income was less than \$10,000. Sixteen teachers sufficed, three of them being principals. Now there are 28 principals, and, including substitutes and supernumeraries, nearly 400 teachers and five department supervisors or teachers, such as manual training, music, art, domestic science, etc.

There is a central high school, with a branch about three miles from the main high school for the convenience of the school children living north of the Trinity River. The others are district schools, so located that no part of the city but is in short distance of a school building. The income of the city schools is now approximately \$325,000 from the special city school tax and about \$100,00 from the State permanent school fund. Last year that was apportioned at the rate of \$7 per pupil within the scholastic age—7 to 17 years—and the expectation is that this year the apportionment will be not less than \$7.50 per capita. As that fund increases, as it does annually, from the enhanced value of the school lands and securities in which the fund is invested, there is an increase in the apportionment. Under the city charter the school fund gets its own taxes at the rate of 50 cents on the \$100 of



1—Second District School Building, Fort Worth. 2—Administration and Men's Building of the Southwestern Baptist Theological Seminary and Women's Missionary Training School, Fort Worth. 3—Fort Worth High School, with accommodations for 1500 pupils. 4—Administration Building of the Texas Christian University at Fort Worth.

valuation. That yields a sum so large that the Board of School Trustees has never taken the full amount permitted by the charter, from 35 to 45 cents having been found sufficient. Fort Worth's per capita expenditures for school purposes is \$26 per annum, which is a high average. The value of all of the school property is \$1,750,000 on a very conservative estimate. All of the schools have manual training and domestic science in some form or other, the highest development being made at the high school, naturally.

The schools are social centers, in a manner, being used for meetings of parents and teachers' clubs and other similar associations. All of the schools are surrounded by good-sized playgrounds, on which are installed sets of the simpler forms of gymnastic apparatus. School playgrounds are open to use at school recess, before and after school hours and on holidays.

With the general administration of school affairs by the Board of School Trustees, there is specific direction and supervision of all of the work of the schools, discipline of the teachers, etc., by a superintendent, whose work has so increased that this year an assistant superintendent was provided. The city is now building three additional school buildings of the "Fort Worth Public School Building Type," known throughout the State and all of the Southwest for beauty and safety. Those are included in the above enumeration.

For nearly a quarter of a century the Southern Methodists of Texas have encouraged a co-educational college at Fort Worth, known as Polytechnic College. It was chartered in 1890. Two years ago the Educational Commission of this church, with a designated bishop as ex-officio presiding officer, was formed by an equal number of representatives from each of the five conferences of this church in Texas. That board determined to abandon the "co-ed" feature of Polytechnic and make it pre-eminently the leading female college of the Southwest, pledging support from all of the conferences and having assurances of support from many of the Southern Methodists of adjoining or nearby States.

Plans were worked out, and this spring the announcement was made that with the close of the current term Polytechnic College would cease to exist and its place would be taken by the Texas Women's College. The property of the Polytechnic was taken over by the trustees of the new school, with the sanction of the Educational Commission, the trustees and general governing body, though the more immediate affairs of the college are administered by its own trustees and officials. On a campus of 25 acres, in the southwestern part of Fort Worth, this college has six buildings of excellent construction, some of the modern fireproof type, reached by an electric trolley line, with a five-cent fare.

Officials say of this college: "It is a women's college of 'Class A.' It has been established in harmony with the general plan of the Methodist Episcopal Church South, and will be maintained and conducted for the purpose of promoting Christian education of women." It meeting all "Class A" requirements, offers standard courses leading to B.A., B.S. and B.Mus. degrees.

With the double object of establishing a high-grade seminary where young men could be educated for the ministry and of establishing a high-class training school for women missionaries, the Southwestern Baptist Theological Seminary was established in this city in 1906, the male students last term being 185. The Women's Training School was also opened for work last term, and the special building for the accommodation of this branch of the work is being built and will be ready for use when the fall term opens. This latter part of the educational work is under the especial patronage of the Women's Missionary Union of the Southern Baptist Convention, which at the recent Nashville meeting raised \$54,000 to insure the completion of the building. It is 118x126 feet in size, three stories and basement, reinforced concrete and modern in all of its equipments. Living-rooms are provided in this, as in the men's building. This seminary has also electric trolley car line connection with the city. Its financial affairs are reported to be in excellent condition, with a constantly swelling income from land endowment, in part.

With a large Roman Catholic population and the exceptional rail facilities for reaching Fort Worth from any part of the State, there has been from its earliest history a school of that denomination in Fort Worth. Within the last few years the school facilities of this

church have been greatly enlarged, and now there are fully 125 sisters and superiors engaged in tuition work in the seven colleges and parochial schools of this church in Fort Worth. There are two which have especial distinction for size and curriculum, Our Lady of Victory College and Our Lady of Mt. Carmel. They have boarding and day school accommodations for hundreds of pupils, and the teaching force numbers about 30 in each school. Conducted by the Society of the Daughters of Isabella, there is a school for Mexican children, well attended, with five sisters in charge, appropriately named "Our Lady of Guadalupe."

The members of the Church of Christ of Texas have chartered the Southland University of Fort Worth, and have acquired a suitable building erected for the Arlington Heights Female College that they may open in September a denominational school at Fort Worth. Plans for the administration building, to be erected at a cost of \$250,000, have been approved by the trustees of the

college and a considerable part or all of the money to put up the building is in hand or pledged.

There are two Episcopal schools; schools of the Christian Scientist, Seventh Day Adventist, a Hebrew school, a number of technical, art, music or other special schools, business colleges, etc.

The school attendance at all of the Fort Worth schools will average during the height of the season 25,000 to 30,000. Many of these scholars are from out-of-town places, the attendance of that character being about 8000 annually.

Above all, in all of the modern school building in Fort Worth the dominating idea has been safety of the pupils. Every comfort of lighting, ventilation, heating, that experience has demonstrated to be worth while has been added to safety until the type of school building erected in Fort Worth, in which the city's public schools were the leaders, has become favorably known to all who give attention to school matters of the advanced type.

Raw Materials for Paper in the South

By VASCO E. NUNEZ.*

A few figures will suffice to show something of the present status and growth of the paper industry in this country. In 1869 the value of the paper produced in the United States was, roughly, \$40,000,000; in 1899 it was \$127,000,000, and in 1909 \$268,000,000, an increase of 110 per cent. in the last 10 years for which statistics are available. In 1909 more than 4,200,000 tons of paper of all classes were produced—approximately 100 pounds for every man, woman and child in the United States at that time. The capital invested amounted to over \$400,000,000, and the running expenses for the year were nearly \$240,000,000. The raw material used cost \$165,000,000, including the cost of 4,000,000 cords of pulp wood, over half of which was spruce. From 1899 to 1909 the increase in the total amount of pulp wood used in this country was about 100 per cent., and during this period the increase in the consumption of domestic wood was but 35 per cent., while that of imported wood was 162 per cent. This means that the supply of pulp wood to meet the rapidly growing demand of the papermaker is being imported in ever-increasing proportion. The domestic supply is not keeping up with the demand. At the present time approximately one-third of the pulp wood used in the United States is imported from Canada, and it is estimated that 30 years will see the last of what is now considered pulp-wood timber in this country.

It is apparent from all this that in order to prevent the wood-pulp and paper industry of the United States from taking wings and flying over to Canada something must be done to provide new sources of raw material. There are two obvious ways of doing this: first, to make use of new woods and of woods hitherto considered inferior for paper-making purposes; second, to make more extended use of fibrous wastes of manufacture and introduce new fibrous materials aside from wood.

In determining the value of a new fibrous raw material for paper making a number of factors must be given careful consideration, and failure in any one requirement is usually sufficient to throw the material in question definitely out of the running. In the first place, a large, durable and sufficiently cheap supply of the material must be available; the location of the supply must be such as to permit economical operation of the mill and marketing of the product; the material must be reasonably easy to collect and handle; it must not be too bulky, since otherwise the yield per unit volume would be unprofitably low; the cellulose content of the material must be at least 35 per cent., and the other chemical constituents of the material of such nature as not to hinder its ready conversion into pulp, and, finally, it must have a well-defined fiber. It is at once obvious that wood fulfills these various requirements almost perfectly, and that the most logical approach to the solution of the problem under discussion is the search for new woods of suitable properties.

Along the lines of utilization of new or inferior woods a great deal has already been done in an experimental

way. The Forest Products Laboratory, United States Department of Agriculture, Madison, Wis., has found that hemlock, jack pine, balsam fir and various species of Western fir can be made to serve as substitutes for the vanishing spruce in the manufacture of newspaper; Douglas fir is being used on the Pacific coast, and redwood is considered as a possibility in California. In the South long-leaf pine is receiving a great deal of attention.

As to fibrous materials other than wood, cotton stalks, cornstalks, bagasse, waste sisal and manila hemp fiber, the wild hemp of Colorado, and a large number of reeds, canes, straws and grasses merit and have received consideration for paper making, as have also cottonseed hull fiber and the flax straw of our Northwestern States, although these two latter materials should not be considered as wood substitutes, but rather as additional sources of rag fiber. A large number of these raw materials can be, and it is expected will be, furnished by the Southern States.

Extracted sugar cane or bagasse has been the subject of considerable unsuccessful experiment on a manufacturing scale. Mills in Louisiana have operated for a short time on this material, only to be abandoned. This should excite no wonder when the character of their raw material is considered. Bagasse resulting from the usual roll-crushing extraction process is unfit raw material for paper for various reasons, the chief of which is the impossibility of producing a high-grade, durable sheet without previous separation of the fiber and the pith of the cane. Arthur D. Little, Inc., have recently completed an extensive series of researches on the paper-making properties of bagasse from the Simmons sugar process. This process, as you are doubtless aware, is a radical departure from the usual sugar-making practice. The cane from the field is shredded and dried, and the pith and fiber separated by air blast before the extraction of the sugar. In the dry state the unextracted cane keeps indefinitely without the slightest fermentation (bales are now in our storage made in 1911) and may be shipped to any desired point for sugar-making and paper-making operations. The fiber used by itself works up into various papers, while when mixed with wood pulp or other paper stock sheets of very desirable characteristics are obtained. Future development of the paper-making side of the process seems very promising.

Another waste material occurring in very large quantities throughout the South is the stalk of the cotton plant, for the use of which for paper a project is now on foot. It is evident that very great difficulties in collection of a supply of this material must be overcome; furthermore, experiments to date have been unsuccessful in producing paper of high quality, so that the value of the cotton stalk for paper making is doubtful. However, the question has not as yet received the study which it demands.

A large number of Southern reeds, grasses and straws could be used for paper had they less severe competition than against wood, and they will undoubtedly be so used to more or less extent when wood becomes less plentiful. At present some work is being done in Florida with saw-grass; rice straw has also received consideration.

*Of the Laboratory of Arthur D. Little, Inc., Boston, Mass. A paper presented before the Louisiana Forestry Association.

and experiments at our mill with certain reeds gave generally satisfactory results.

The chief paper-making raw material of the South, however, and the one which is of the greatest present interest, is that which surrounds us on every side—long-leaf pine.

This wood, which outranks all others in commercial and industrial value, is, of course, too valuable to be worked directly into paper, and it is only the waste of the logging and milling operations that the papermaker can hope to touch. The amount of this waste, however, is too vast to be readily conceived. The total cut of yellow pine in 1910 was 14,000,000,000 board feet. It is estimated that 60 per cent. of the total wood in the tree is wasted in the woods and at the mill, so that, since the figure just given refers to output of finished lumber, the total waste wood amounted to 21,000,000,000 feet. This amount of wood is sufficient to make about 35,000 tons of paper a day, provided it could all be collected and used. The papermaker, however, is forced to be somewhat nice in the selection of the wood that he uses. He cannot use red heart, punky or partially rotten wood, nor wood that is badly charred, nor wood that is excessively knotty. He cannot afford to handle very small pieces, and he suffers some loss when removing the bark due to the fact that a greater or less amount of wood immediately underlying the bark is usually removed at the same time. Making generous allowance for these losses and for the unavailability of a large proportion of the waste wood due to its location, we may safely assume that at least 10 per cent. of the total waste is suitable and available for paper-making purposes. On this basis there is enough wood for the manufacture of 3500 tons of paper every 24 hours. This would add about 25 per cent. to the total production of paper in the United States.

Long-leaf pine wood is well adapted for the manufacture of certain classes of paper. It is heavy; it possesses a strong, broad fiber averaging 4.28 millimeters in length as compared to the fiber length of 2.8 millimeters for spruce and 2.4 millimeters for hemlock. The yield of pulp per unit weight compares favorably with that of other pulp wood, and the yield per unit volume is higher than most. The chief disadvantage of the wood for paper making is its high contents of resinous matter, which precludes the application of the sulphite process for pulp manufacture, which in point of cheapness of operation and ease with which the product may be bleached is generally superior to the sulphate or soda pulp processes.

The two latter processes may be successfully applied to the pulping of long-leaf pine, and it has been definitely proven that the sulphate process is superior for the purpose. The particular process which has been commercially adopted is the Kraft sulphate process, the product of which is a tough, long-fibered, unbleachable brown pulp excellently suited for the manufacture of Kraft wrapping paper. By this process one cord would yield about 1200 to 1500 pounds of paper pulp. In the operation of this process the wood, after having been reduced to chips of suitable form and dimension, are fed to a steel digester, which may be either stationary or rotating, and cooked for three to six hours under steam pressure of about 100 pounds with a strongly alkaline liquor containing as its principal ingredients caustic soda, sulphide of soda and sulphate of soda (or salt cake). After cooking the chips, which are now thoroughly softened, the greater part of the non-cellulosic constituents of the wood having been dissolved, are blown from the digester and the pulp thoroughly washed and then screened to free it from splinters and unreduced particles. The pulp is then pumped to the beating engines, or hollanders, and after beating and subsequent refining in a Jordan or Marshall engine is run out into paper over a Fourdrinier or sometimes over what is known as a Flying Dutchman machine. The chief feature of the latter is that several small drying drums of the Fourdrinier are replaced by a single drier of large diameter. The success of the process depends in a large part on the recovery and re-use of the chemicals used in the cooking liquor. The "black liquor" and washings of the pulp are collected, evaporated to a considerable extent and passed to a rotary incinerator, where they burn to a so-called black ash containing the soda salts, chiefly in the form of soda ash. This black ash is further incinerated and fused in a furnace called the melting furnace, and at this stage whatever loss of chemicals has occurred is made up by the addition of salt cake (sulphate of soda). Chemical action in the melting

furnace converts part of the salt cake into sulphide of soda. The melt is then dissolved in water and the soda ash present converted to caustic soda by the addition of quicklime. The liquor now contains its original constituents, viz., caustic soda, sulphide of soda and sulphate of soda, and is ready for use in cooking another lot of wood.

As already stated, long-leaf pine seems particularly well adapted for the manufacture of Kraft wrapping paper. Kraft was introduced into this country from Sweden about 10 years ago, and is the last word in wrapping paper. The paper largely used in former years for wrapping parcels was a comparatively heavy sheet made largely of sulphite spruce pulp. It was easily torn and expensive, because a pound has so little covering power. When one buys wrapping paper the consideration should be not "What does it cost a pound?" but "What does it cost a square foot?" Kraft costs less per square foot than many papers which it considerably exceeds in price per pound, since, owing to its remarkable strength and durability, it may be made very thin and light. By reason of these properties it has almost driven the older wrapping papers from the market in the East and North.

The use of long-leaf pine for wrapping paper has been dwelt upon because Kraft is the only important variety of paper which has thus far been made successfully in a large way.

The other so-called "yellow pines"—short-leaf and loblolly—are generally considered inferior to long-leaf pine for paper-making purposes, but this opinion appears to be founded on scanty evidence, since little work has been done toward their evaluation.

As you are all aware, four paper mills using long-leaf pine have already been built and put into operation. Of these two are now idle, while the other two passed through a long period of trouble and tribulation before reaching a satisfactory operating basis. I am convinced, however, that these partial failures are due, not to the unsuitability of long-leaf pine as a paper-making raw material, but to other causes.

I believe that the long-leaf pine district of the South has a rosy future as a paper-making territory. Fuel and raw materials are plentiful and inexpensive. Supplies are generally more expensive than in the North, but not excessively so. The climate is even and fuel for heating purposes is practically unnecessary. Water is found in abundance and is generally of excellent quality for industrial purposes. The freights to the Northern markets are high, but by no means prohibitive, and the wonderful progress and advancement of the South are opening an increasingly important market close at home, while the Panama Canal will open up the markets of Western South America and of the antipodes. The papermaker is reaching out around him for new materials. He will reach into the South, into Louisiana, and will turn its present waste materials into a new source of wealth and profit.

Kansas City & Memphis Receivers.

The Kansas City & Memphis Railway, about 60 miles long from Rogers to Fayetteville, Siloam Springs, Monte Ne and other Arkansas points, has been placed in a receivership, W. R. Felker, chairman of the board, and O. C. Lisman, vice-president and general manager, being named as receivers. It is alleged that there are two mortgages, one for \$300,000 and another for \$508,000, besides a floating debt of \$90,000, which the company is unable to meet. Wm. P. Riley of New York made the application for the appointment of receivers. The road traverses a fruit-growing region in the north-western part of the State.

The Mayes Addition.

The Mayes Manufacturing Co., Mayesworth, N. C., will erect an additional building, three stories high, 130x75x12 feet, of brick construction, costing about \$20,000. As stated last week, contract has been awarded to T. C. Thompson & Bros. of Charlotte and Birmingham. This building will enable the company to add 4000 spindles, motors for electric drive, etc., all the machinery having been ordered. At present the company has about 18,000 spindles on the production of 36s to 80s combed yarns.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details of Week's Progress in Improvements in City and Country.

Further details of road and street undertakings and bond issues mentioned below are given under the headings Construction Department and New Securities, published elsewhere in this issue.

The MANUFACTURERS RECORD invites from its readers information about road and street work projected or under way, photographs of good roads and discussions of matters pertaining to the betterment of the highways of the South.

Bonds Voted.

Cumberland, Md.—City voted \$150,000 bonds to pave streets.

Hahnville, La.—Road District No. 3, St. Charles parish, voted \$110,000 bonds to construct roads.

Jasper, Ala.—Walker county voted \$250,000 bonds to construct roads.

Ripley, Tenn.—City voted \$5000 bonds for street improvements and \$10,000 for sidewalks.

Southport, N. C.—Smithville Township of Brunswick county voted \$10,000 additional bonds to construct roads.

Bonds to Be Voted.

Crossville, Tenn.—Cumberland county votes August 20 on \$75,000 bonds to construct roads.

Osceola, Mo.—St. Clair county votes in November on \$14,000 bonds to improve roads.

Tuskogee, Ala.—City votes August 24 on \$15,000 bonds to improve streets.

Contracts Awarded.

Baltimore, Md.—City awarded \$44,008 paving contract.

Baltimore, Md.—City awarded \$15,028.75 contract for granite-block pavement.

Birmingham, Ala.—City awarded \$48,780 paving contracts.

Dallas, Tex.—City awarded contract for 90,000 square feet cement sidewalks and 27,000 square feet concrete gutter.

Fort Myer, Va.—Richard E. Boissieu, 2700 Wisconsin avenue, Washington, D. C., has contract at \$4185 to construct road.

Independence, Mo.—Jackson county awarded \$9373 contract to grade and drain roads.

Kaufman, Tex.—City awarded contract for 20,000 yards vitrolithic paving.

Mayfield, Ky.—Graves county awarded contract to gravel 50 miles of road; \$18,000 available.

Newton, Miss.—Newton county awarded \$40,369.65 contract to construct 22.11 miles of gravel roads.

Tupelo, Miss.—Lee county awarded contracts to construct 49 miles of roads.

Contracts to Be Awarded.

Baltimore, Md.—State receives bids until August 4 to build 10 sections of State highway; about 42.18 miles.

Beaumont, Tex.—Jefferson county authorized construction of road 10,266 feet long and 40 feet wide in Precinct No. 1.

Belton, Tex.—Road District No. 7, Belton county, opens bids August 3 to construct about 40 miles of gravel road; \$105,000 available.

Centerville, Ala.—Bibb county receives bids until August 19 to grade, drain and surface with chert portion of Centerville and Blocton road; expenditure \$10,500.

Cumberland, Md.—City arranged for expenditure of \$258,000 to pave streets.

De Land, Fla.—Volusia county asks bids until August 3 to construct about six miles of hard-surfaced shell road; cost about \$15,000.

Grenada, Miss.—City asks bids until August 3 for about 14,000 square yards street paving with vitrified brick, wood block, concrete and bitulithic, 4000 linear feet concrete curb, etc.

Eutaw, Ala.—Greene county receives bids until August 17 to grade, drain and surface with chert part of Eutaw and Clinton road; expenditure \$7000.

Hartselle, Ala.—City will construct 12,000 square yards paving and one-quarter mile of curbing gutter.

Hattiesburg, Miss.—Forrest county will grade, bridge and surface 5½ miles of streets and roads.

Laurel, Miss.—District No. 2, Jones county, will construct 14 miles of streets and roads.

Louisa, Va.—Louisa county receives bids until July 25 to construct four miles of soil road.

Lynchburg, Va.—City appropriated \$15,000 to improve streets.

Marion, Ala.—Perry county receives bids until August 18 to grade, drain and surface with gravel part of Burrough's Ferry road; expenditure \$6500.

Old Fort, N. C.—Old Fort Township of McDowell county receives bids until July 25 to improve 9¼ miles of Central Highway.

Panama City, Fla.—City receives bids until July 27 to build 2000 feet cement sidewalk and grade one mile of streets.

Princeton, W. Va.—Mercer county receives bids until July 30 for grading, masonry and macadam on about 32 miles of road.

St. Louis, Mo.—City receives bids until August 7 for street improvements estimated to cost \$57,450.

Tampa, Fla.—City opened bids July 21 for 4500 square yards of street paving.

Vanceburg, Ky.—Lewis county will construct new and repair old roads; 150 miles involved.

Vinita, Okla.—Craig county will build about 35 miles of road.

Good Roads in Dollars and Cents.

Approximately \$206,000,000 was spent last year on public roads in the United States, according to statistics prepared by the United States Department of Agriculture. In 1904 the total was only \$79,000,000. In nine years, therefore, the increase has been over 250 per cent.

This awakening on the part of the country to the importance of good roads has, experts say, been due in great measure to the principle of State aid to counties and other local communities. New Jersey began the movement in 1891, when it passed its State highway law. Massachusetts and Vermont followed a year later, but for the most part the other States were slow to move. In 1904 only 15 had State highway departments; today there are only six that have not. In 1913 the individual States appropriated a total of \$38,755,088 to supplement local expenditures.

The value of this State aid is, however, not to be measured by the figures alone, for the bulk of the money comes, and always must come, from the counties and townships. Thus in 1912 the cash outlay by counties, districts and townships was \$137,493,985. Complete figures for 1913 are not yet available, but it is safe to estimate the sum at approximately \$151,000,000. To this must be added some \$15,000,000 to represent the value of the labor contributed instead of cash in districts where this practice prevails. Last year, therefore, local communities contributed, in round numbers, \$166,000,000, as against appropriations from State treasuries of \$38,755,088. The true importance of this thirty-eight millions lies in the fact that it means expert supervision of the expenditure of a considerable portion of the vast sum of \$200,000,000. When each county built as it chose and when it chose, the services of trained engineers were usually out of the question. There was little opportunity to test innovations, little advance in the science of road-building, and there was also difficulty in arousing each county individually to do its best to improve conditions within its own limits. State aid has changed all this. The best engineering skill is available for all works of importance, there is co-operation and a constant stimulus to further improvements. The money contributed by the States does not only build more roads, it makes better those that other money builds.

At the present time there are in the United States 20,741 miles of roads improved either wholly or in part by State aid. This is nearly the mileage of the French routes nationales, the system of great national highways which is the envy of every civilized nation. The routes nationales are, of course, only a small part of the total mileage of France, where practically every road of any importance is an improved road, and France is a vastly

smaller country, both in area and in population, than the United States, so that this comparison is not in itself very flattering to our progressiveness. It shows, however, that we have at least made a beginning. Of the 2,226,842 miles of roads in the United States, 223,774 miles, or approximately 10 per cent., are classed as improved.

To improve the remaining 90 per cent. may well seem a big job. It is, in fact, only made possible because the work really pays for itself. From material gathered by the United States Department of Agriculture, it is now possible to prove not only that good roads are a profitable investment, but to determine exactly what dividends they pay. An investigator assigned to this problem in any given locality first ascertains the extent of the territory that is tributary to any main road, much as one might ascertain the territory tributary to some river. The next step is an accurate estimate of the total product of this territory; so much grain, so much tobacco, so much garden truck, etc. Of this quantity a certain portion is consumed on the farm; the rest is shipped over the road in question. The whole calculation can then be checked by investigators at the shipping point to which the road leads. In general it has been found that the two methods yield much the same information—the total amount of produce hauled over the road. Next, the length of the average haul is calculated, the size of the load permitted by the character of the road ascertained, and the cost of teams and drivers figured. With these facts before him, the investigator is now able to state positively the cost of hauling a ton of produce on that road, to express in terms of these "ton-miles" the freight traffic on the road, and finally the total cost to the community served by the road of hauling its goods to market. Armed with these data, it is easy to decide how much money can be profitably spent in improving the road, and what are the returns that the investment yields to the community.

These returns are of various kinds. First and foremost is the reduction in the actual cost of hauling, the plain fact that it takes less time and labor to haul a load over a good road than over a poor one. Less obvious is the effect of improved roads in increasing the total output of a community. In the case of one county in Virginia, where particularly thorough records have been kept, this output was more than doubled. The farmers found that with a market always and readily accessible to them, it paid to work the land to its maximum production.

This explains the very remarkable rise in farm land values which nearly always accompanies road improvement. The rise is not a fictitious one, of no benefit to the man who wishes to farm and not to sell. The land is more valuable, because it can profitably be made to produce more. In other words, the money that goes into the road comes back with interest from the land.

American Road Congress.

At least six great national organizations are expected to hold distinct sessions at the Fourth American Road Congress in Atlanta, Ga., during the week of November 9, under the auspices of the American Highway Association and the American Automobile Association. A session devoted to the discussion of the merit system in the management of public roads will be held by the National Civil Service Reform League. As there are more than 100,000 petty officials having authority in road matters throughout the United States, and as there is an annual expenditure well over \$200,000,000, at least \$50,000,000 of which is wasted every year, according to expert judgment, the field of usefulness for the league is a broad one. Ways and means of bringing about an efficiency or merit system in lieu of the present loose political organization will engage the attention of the delegates at the congress for one full session. President Richard Henry Dana of the National Civil Service Reform League will be one of the presiding officers.

An exact compilation of every existing road law in each of the 48 States is nearing completion, and will form the basis for analysis and proposed revision at an exceedingly important session of the congress to be directed by special committees of the American Bar Association and the American Highway Association. It is expected that this session will result in a comprehensive plan of simplified and efficient road legislation, which may be presented through the Governors of the States to each State Legislature at their next session.

At the Third American Road Congress, held last year in Detroit, one of the most interesting sessions was that relating to finance, which was held under the auspices of a committee from the American Bankers' Association. A large portion of the 4000 delegates present at the Detroit meeting attended the finance session and paid close attention to the proceedings. This year's congress will devote particular attention to the financing of road improvement in view of the fact that upwards of half billion dollars of road bonds are now outstanding and questions relating to issuance of new bonds and methods of retirement are assuming increasing importance.

I. S. Pennybacker, executive secretary of the Road Congress, with headquarters at Washington, D. C., states that indications are that the Atlanta Congress will attract the largest assemblage of delegates and visitors ever assembled at a non-political public welfare meeting in America. The exhibitors at the congress announced up to July 21 are:

Adams & Co., J. D., Indianapolis, Ind.
American Cast Iron Pipe Co., Birmingham, Ala.
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Amies Road Co., Easton, Pa.
Association of Portland Cement Manufacturers, Philadelphia, Pa.
Atlanta Gas Light Co., Atlanta, Ga.
Austin-Western Road Machinery Co., Chicago, Ill.
Austin Machinery Co., W. E., Atlanta, Ga.
Baker Manufacturing Co., Springfield, Ill.
Barber Asphalt Paving Co., Philadelphia, Pa.
Barrett Manufacturing Co., New York and Birmingham, Ala.
Bausch & Lomb Optical Co., Rochester, N. Y.
Buff & Buff Manufacturing Co., New York and Boston.
Chattanooga Sewer Pipe Co., Chattanooga, Tenn.
Concrete Age, Atlanta, Georgia.
Dixie Culvert & Metal Co., Atlanta, Ga.
Engineering News, New York.
Engineering & Contracting, Chicago, Ill.
Engineering Record, New York.
Finley, Sam E., Atlanta, Ga.
Florida Metal Products Co., Jacksonville, Fla.
Franklin Co., H. H., Syracuse, N. Y.
Garford Truck Co., Elyria, N. Y.
Good Roads Machinery Co., Kennett Square, Pa.
Greenberg Iron Co., A. L., Terre Haute, Ind.
Gurley, W. & L. E., Troy, N. Y.
Holt Manufacturing Co., Stockton, Cal.
Hvaas & Co., Charles, New York.
Iroquois Iron Works, Buffalo, N. Y.
Koehring Machine Co., Milwaukee, Wis.
Kriegshaber & Son, V. H., Atlanta, Ga.
Lehigh Portland Cement Co., Allentown, Pa.
Manufacturers Record, Baltimore, Md.
Marion Steam Shovel Co., Marion, O.
Mark Nabors & Co., Atlanta, Ga.
Marsh-Capron Manufacturing Co., Chicago, Ill.
Neal & Son, W. A., Atlanta, Ga.
Neuchatel Asphalt Co., New York.
Pioneer Tractor Co., Winona, Minn.
Power & Mining Machinery Co., Cudahy, Wis.
Ransome Concrete Machinery Co., Dunnellen, N. J.
Robeson Process Co., Pennington, N. J.
Russell Grader Co., Minneapolis, Minn.
Roemae, Ltd., Philadelphia, Pa.
Smith Co., T. L., Milwaukee, Wis.
Southern Portland Cement Manufacturers, Chattanooga, Tenn.
Southern Wood Preserving Co., Atlanta, Ga.
Southern Machinery Co., Atlanta, Ga.
Standard Oil Co. of New York, New York.
Steel Protected Concrete Co., Philadelphia, Pa.
Tarrant Manufacturing Co., Saratoga Springs, N. Y.
The Texas Company, New York.
Thew Automatic Shovel Co., Loran, O.
Troy Wagon Works Co., Troy, N. Y.
Trussed Concrete Steel Co., Detroit, Mich.
U. S. Asphalt Refining Co., New York.
Universal Portland Cement Co., Chicago, Ill.
U. S. Wood Preserving Co., New York.
Waring-Underwood Co., Philadelphia.
Warner-Quinlan Asphalt Co., New York.
Warren Bros. Company, Boston.
Western Wheeled Scraper Co., East Aurora, Ill.
Wood Drill Works, Paterson, N. J.

Activity in Concrete and Other Road Building Work.

According to the statement issued by a cement company in Chicago, the State aid which is now being given to each of the 102 counties in Illinois in building concrete roads is resulting in such widespread road building that the company has received an order for 400,000 barrels of cement to be used in these concrete roads, which it is said is the largest single cement order ever given in that State.

We are evidently entering upon a period of very great activity in the building of concrete roads. In all parts of the country, West, North and South, large expenditures are being made for building roads of this character. Apparently we are only at the beginning of the concrete road age. Indeed, the country is only at the beginning of its road-building period. Figures issued by the United States Department of Agriculture show that this country expended last year over \$200,000,000 in road work. In view of the enthusiasm for roads, based on the demonstrated facts as to their value, it may be counted that the time is not far distant when this country will be spending \$500,000,000 a year on road work. And why should this not be true? The railroads are spending more than \$500,000,000 a year in maintaining their property, and two or three times as much ought to be spent in the betterment and extension of the railroads of the country if the money were available. With highways aggregating more than 1,000,000 miles in length, with a realization that improved highways are as essential to the advancement of civilization and the development of a country as are railroads, the entire country has taken up improvement work in such a way as to guarantee that there will be no let-up until the main highways of the entire country have been rebuilt with permanent construction. In some places this will be through the use of sand-clay in making sand-clay roads, which are admirably adapted to the needs of large areas. In some cases brick will be extensively used, and many miles of brick roads are now under construction in the South, as well as elsewhere. In some cases macadam will be the order of the day, and in others cement will be used to an ever-increasing extent unless some better material be found available.

Road builders, road machinery makers, road engineers and everybody else connected with highway improvement work ought to have a very busy time during the next five or ten years. Indeed, the road situation is very largely taking care of the cement output during this period when construction in other lines is less active. If to the consumptive requirements of road building, now constantly increasing, there should be added an expansion in cement requirements by reason of a boom in business and in building work, there would be a great shortage in the cement output of the country, for existing plants would not be able to take care of the demand. It is not probable that for several years to come moneyed people will be willing to build new cement plants, and not until existing plants have again passed through a few years of profits fat enough to compensate for the long years of lean profits is it likely that new money will go into the building of plants. Thus existing cement plants ought to be able to get the full benefit of increasing demand and the higher prices which are likely with the next burst of business activity.

Six Months' Road Building in Texas.

During the first half of 1914 seventy-three road and bridge bond elections have been conducted in Texas, according to data compiled by the Texas Business Men's Association. Fifty-one of these elections were successful and resulted in the issuance of highway improvement bonds in the sum of \$6,581,500, which is an increase of \$3,256,500 over the amount of road and bridge bonds authorized in the State during the same period of last year, and lacks only \$715,000 of equaling the total amount issued in 1913 for road work.

Twenty-two attempts to issue road and bridge improvement bonds in Texas have been refuted by taxpayers in various sections during the first six months of 1914, and if carried, it would mean the issuance of \$3,470,000 more for road work in the State.

In a majority of instances where these propositions failed, new districts are being mapped out so as to eliminate the mossbacks or those opposed to good roads,

and through this process it is expected the opposing vote will be narrowed to a minimum.

First Concrete Road in Mississippi.

What is said to be the first concrete road let to contract in Mississippi has just been awarded for the building of 11½ miles between Saltillo and Verona. The Board of Supervisors of Lee County let contract a few days ago for 49 miles of good roads over routes already surveyed. The greater portion of these new roads, as reported by the Tupelo Journal, will be macadamized with the best construction of that material.

It was decided to build a test road of 11½ miles of concrete, not only that the people of that State might have the opportunity of seeing a concrete road and its advantages, but that people from nearby States might make a study of the situation there, just as for several years engineers and county commissioners have been journeying to Detroit to make a study of the first concrete road put down near that city.

The Tupelo Journal tells an interesting story of how Lee county came to make this contract for concrete road. It states that a pamphlet issued by the State of Arkansas, showing the cost of streets laid in some of the Arkansas cities of concrete, fell into the hands of Mr. Frank Goodlet of Tupelo, and to this it adds:

"The work reported in this pamphlet, done by Geo. L. Meyers, city engineer of Fort Smith, Ark., showed that the price was within the reach of counties or districts that contemplated the building of permanent roads. Mr. Goodlet addressed a letter to the Portland Cement Manufacturers of Philadelphia, asking for information as to their cost and practicability. The Portland Cement Manufacturers immediately sent their engineer, Mr. A. C. Toner of Baltimore, to Tupelo to aid our people in any way possible in deciding the question of building concrete roads. Mr. Toner's versatility with every detail of the work and the cost of construction enabled him to interest our people in the feasibility of the project, and a thorough investigation was made. Members of the board of supervisors and the road commissioner and county attorney and other citizens visited Detroit, and after a thorough examination of the roads and the cost of construction and maintenance, the board was unanimous in the conclusion that concrete were the roads to build where sufficient funds were available.

"The board determined to advertise for bids on both macadam and concrete. The services of Mr. Toner were placed at the disposal of the board, and at its request he prepared plans and specifications that were used in advertising for bids and which were adopted by the board for the construction of our concrete road."

This movement in Mississippi will interest a very large number of people throughout the whole central South who are studying the road-building question and want to get the best roads that can be constructed, considering the length of service and cost of repairs. Every kind of road-building material is in these days being studied and tested out, and macadam, bricks, concrete and sand-clay are all being actively pushed by men enthusiastically interested in good roads.

For a Joint Meeting.

The board of directors of the American Road Builders' Association has voted unanimously for a joint convention or congress with the American Highway Association in 1915, either in San Francisco or in Oakland, during the Panama Pacific Exposition. The management of this joint meeting will be in the hands of a committee of five made up of two members from each association, the fifth member to be selected by these four.

Planning for System of Roads, and Engineer Wanted.

Jas. H. Warburton, secretary of the Salisbury Industrial Club, Salisbury, N. C., in a letter to the MANUFACTURERS RECORD, says:

"Chairman H. C. Trott of the County Commissioners asked me to say to you that Rowan county is planning to construct a complete road system. We build our roads through direct taxation. Rowan is one of the few counties in the South having good roads that does not

owe a dollar on them. We have between \$40,000 and \$50,000 a year for road building. We use the county chain-gang system. At this time we are looking for a road engineer. We want a man who has had some experience and knows how to build the right kind of roads at the proper cost. We do not care to pay a big salary, but it is an excellent opportunity for some good man to show what can be done under the direct taxation system. We have in mind paying not more than \$1800 a year. If you can put us in touch with such a man the favor will be appreciated."

To Encourage Road Engineering Study.

With a view to turning the attention of engineering students in the technical schools of the country to the study of street and road construction as a promising field of work, the Barber Asphalt Paving Co., Philadelphia, several months ago offered awards of \$100 each for papers from engineering students on the subject of asphaltic materials for highway construction. The judges were editors of two leading engineering papers, and they have now awarded 13 prizes of \$100 each to contestants from some of the foremost institutions of the country. Only one Southern student, B. J. Fletcher of Parrott, Ga., a student of the University of Georgia, secured a prize. The other prizes were awarded to men from the North and West. In view of the activity in the development of roads in the South there is a great opportunity in the technical schools of this section to give attention to every phase of road construction work.

For 250 Miles of Highways.

Bids for improvements on about 250 miles of highways in Pecos county, Texas, will be received until August 13, separate bids being asked on the concrete work. Howell Johnson, County Judge, Fort Stockton, will receive the proposals, and the construction plans are by Whitenaker & Washington, engineers, of Fort Stockton.

Roads and Bridges Costing \$125,000.

Roads and bridges costing \$125,000 will be constructed for Road District No. 2 of Milam county, Cameron, Tex. The roads will be about 50 miles long, and this contract has been awarded at \$71,005 to Howard & Taylor of Belton, Tex.

Bids for 40 Miles of Roads.

The Commissioners of Road District No. 7, Bell county, Belton, Tex., will open bids on August 3 for the construction of about 40 miles of 14 and 16-foot gravel roads, comprising seven highways radiating from Holland and several cross-roads. See & Smith of Temple are the engineers.

CHESAPEAKE & OHIO'S BRIDGE.

\$2,000,000 Structure Will Span the Ohio River East of Portsmouth.

The Chesapeake & Ohio Railway Co. has decided to build its proposed bridge over the Ohio River about eight miles east of Portsmouth, O., and a short distance above the mouth of the Little Scioto River. The railroad follows the south bank of the Ohio, which makes a bend to the northward at this point, so that the crossing of the stream will be near the apex of an acute angle and in the general direction of the line which will be built from there to a point near Columbus, O., about 93 miles. The bridge will consist of two cantilever spans, each 750 feet long, and 24 plate girder spans, each 80 feet long, making its total length 3420 feet. It is estimated that the cost will be about \$2,000,000.

The new railroad, it is reported, will follow the Little Scioto River and near Stockdale will cross to the Scioto River near Waverly, going over the latter stream north of Chillicothe. Connection with the Hocking Valley Railway will be at Valley Crossing, southeast of Columbus. All the new construction will be under the direct supervision of M. J. Caples, vice-president of the Chesapeake & Ohio Railway, who has established headquarters at Columbus.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

BIRMINGHAM AND MOBILE.

Illinois Central Reported Planning Entrances to Both Places.

The Illinois Central Railroad, according to reports which have not yet been either confirmed or denied by the company, has under consideration two important plans in the South. One is the construction of a new line from Jackson, Miss., to Birmingham, Ala., about 200 miles, and the other is a connection from Haleyville via Winfield, Ala., with the Alabama, Tennessee & Northern Railroad at Reform, Ala., to enter Mobile. This latter would require the construction by the Illinois Central of 15 or 20 miles of line from Haleyville to Brilliant, Ala., the northern end of its independent piece of railroad, which reaches from there to Winfield, and the building by the Alabama, Tennessee & Northern of an extension from Reform to Winfield, about 40 miles. John T. Cochrane of Mobile, president of the Alabama, Tennessee & Northern, declined to discuss the report. Another rumor is that the Illinois Central would control the other road and then build the connecting links.

The Alabama, Tennessee & Northern is 185 miles long from Reform to Calvert, Ala., 30 miles north of Mobile, and entrance to the city is obtained over the Southern Railway. There is a branch from Calvert to Nannahubba, on the Tombigbee River, three miles. Such a combination would afford the Illinois Central a very direct route from a junction with its main line at Fulton, Ky., to Mobile.

As for the Jackson-Birmingham plan, it has been rumored for several years, but recently engineers were reported surveying for it in the vicinity of Tuscaloosa, Alabama.

ELECTRIC LINE TO THE SEA.

Beach Development Proceeding at Fort Fisher, South of Wilmington, N. C.

The Kure Land & Development Co., Wilmington, N. C., which proposes to build an electric railway from there to Fort Fisher, 18 miles, has not matured its construction plans, but expects to do so soon. The company owns and is developing Fort Fisher Sea Beach, which is on the Cape Fear peninsula, about three-quarters of a mile north of the ruins of old Fort Fisher. The tract consists of more than 700 acres of land extending through from the ocean to the Cape Fear River. The ocean and river frontage is rather more than a mile and a half.

The company has built a 700-foot pier on the river side and a steam railroad from there nearly to the sea beach, over a mile, this being in operation to convey passengers arriving by boat to the ocean side of the peninsula. A bathhouse of two stories, with living-rooms on the second floor, has been built, and the first cottage is being erected. Others are to be built this fall and winter. Macadamized streets and cement sidewalks will be provided by next season. A water supply will be introduced. Land has been reserved for the erection of a hotel.

Officers of the company are Hans A. Kure, president; J. H. Hinton, vice-president; Lawrence C. Kure, treasurer; Hans A. Kure, Jr., secretary; H. M. Clark, sales manager.

Telephone Block System.

A telephone block system will be installed by the Southern Railway Co. in place of the telegraph system now in use on its Atlanta division between Macon, Ga., and Ooltewah, Tenn., a distance of 225 miles, and preparations are now being made to effect the change. In the existing system there is one wire, but the telephone system will have two wires, and each office will have one bell for the north block and one for the south block, and it will be possible to connect the telephone with either. Furthermore, when an office happens to

be closed the line can be cut through it. Moreover, the wires for the telephone block will also be used for telegraph circuits from Atlanta to Macon and from Atlanta to Ooltewah and into Chattanooga.

The railroad where this telephone service will be installed is part of the route of the Southern Railway's through trains between the West and Florida, and in order to take care of the heavy traffic last winter a telephone block was placed in operation between Macon and Jesup, Ga. It was found to be so satisfactory that the decision was made to extend the system. The telephone lines will be put in use just as soon as the change can be accomplished.

NEW MAIN LINE OPENED.

\$5,800,000 Spent by Louisville & Nashville to Increase Capacity.

The Louisville & Nashville Railroad Co. has completed its new double-tracked line from Nashville, Tenn., southward to Athens, Ala., and put it in operation, in addition to its existing single-track line between those points. The new construction is approximately 73 miles long from Brentwood, near Nashville, to North Athens via Lewisburg, Tenn., and the corporate name of the subsidiary company chartered for the work is Lewisburg & Northern. According to a report from Nashville, the cost of construction will approximate \$5,800,000. The engineering plans were made by John Howe Peyton, now president of the Nashville, Chattanooga & St. Louis Railway, and work was begun about two years and a half ago.

The new route was selected and built to increase the train load between Nashville and Birmingham. It is of very easy grades as compared with the old line, and is remarkably free from curves; there are several long tangents. A feature of the work was a large cut near Brentwood, about 90 feet deep at its greatest depth and about a mile long. It was nicknamed the Culebra Cut, after the great cut on the Panama Canal. There are two important tunnels, one of 1500 feet and the other of 500 feet, besides several bridges. A very large fill was made with the material taken from the Brentwood cut.

The opening of the new road for traffic was made the occasion of a trip over it in a special train carrying a large number of people from Nashville to Athens. A big demonstration was made at Lewisburg. The line has been equipped with telephone system and block signals, and is thoroughly up to date.

New Equipment, Etc.

Pennsylvania Railroad is adding a number of steel box cars to its equipment, this being in the nature of an experiment. Each car costs about \$1500, as compared with \$1050 for a wooden car, but this price will eventually be reduced.

Southern Railway has ordered 19,000 tons more of rails from the Tennessee Coal, Iron & Railroad Co., Birmingham. This makes 29,000 tons recently placed by the company.

St. Louis, Brownsville & Mexico Railway has filed an equipment contract covering 20 10-wheel locomotives from the Baldwin Locomotive Works, Philadelphia; 6 steel underframe passenger cars, each 70 feet long; 4 steel underframe mail and baggage cars, 20 steel tank cars of 10,000 gallons capacity each, 80 steel frame box cars of 30 tons capacity each, and 10 cabooses. The cars will be furnished by the American Car & Foundry Co., St. Louis, and the Mt. Vernon (Ill.) Car & Manufacturing Co.

Rock Island Lines have ordered 7000 tons of rails from the Illinois Steel Co., Chicago, and 10,000 tons from the Colorado Iron & Fuel Co., Trinidad, Colo.

Virginian Railway has ordered 100 tons of bridge steel from the Belmont Iron Works, Philadelphia.

Wabash Railroad, it is reported, will buy 7 mail cars.

Southern Pacific Company has ordered 30 locomotives from the Lima Locomotive Corporation, Lima, O. Fosburgh Lumber Co., Norfolk, Va., has ordered a Prairie type locomotive from Baldwin's.

Tampa & Gulf Coast Railroad is reported in the market for some passenger cars.

Mobile & Ohio Railroad will spend over \$1,000,000

for equipment thus: Seven Consolidation locomotives, 8 passenger coaches, 4 combination mail and baggage cars, 4 express cars and 1000 ventilated box cars.

\$350,000 CONTRACT AWARDED.

Clinchfield Coal Terminal Begun at Charleston, Increase in Capacity.

The Holston Corporation, which is building the terminals for the Clinchfield Railway at Charleston, S. C., has awarded a contract to the MacArthur Brothers Company, Hanover Bank Building, New York, to build the substructure for the new coal-handling plant for the railway company on the Cooper River. Work has already begun. The approximate value of the contract is \$350,000.

The Atlantic, Gulf & Pacific Dredging Co. has started work upon the dredging necessary, which will require the removal of 1,300,000 cubic yards of material, and to fulfil the plans of the railway company it will be necessary to divert the course of New Market Creek. Permission for this has been granted by the local authorities. Changes in the original plans and the construction of a basin will make the facilities of double the capacity at first proposed.

Street Railway at Miami, Fla.

As a result of a local election, a franchise has been granted for a street railway at Miami, Fla., to B. B. and J. H. Tatum and associates, and the Miami Traction Co. is to be incorporated to build the line, which will be about 2½ miles long, and is expected to be completed by December next. A report from there says that an order has been placed for four cars. As for power, if electricity cannot be obtained from the existing local power and light plant, the railway company will erect its own power station. Heavy rails will probably be laid, as it is contemplated, after constructing the street railway between Waddell street and a point west of Lawrence Drive, to build an interurban line. The men back of the plan are interested in the Lawrence Estates Land Co. of Miami, and among them are D. T. Davis, D. M. Hadley, E. P. Black and A. N. Bryson, all of Findlay, O., and U. G. Baker of Indianapolis, Ind.

Double-Track Cut-Off Line.

The Southern Railway has awarded contract for the construction of a double-track cut-off line between Danville and Dry Fork, Va., 13 miles, to Robert Russell, who will have headquarters at Danville. This work will involve a change of line for the entire distance, and will include a double-track bridge across the Dan River. The new line will eliminate a heavy grade and much curvature, and is an important link in the work of securing a double-track route between Atlanta and Washington, which President Harrison plans to complete in the next five years.

Freight Station and Warehouse.

The Queen & Crescent System will build a freight station and warehouse in Chattanooga, Tenn., upon the site at the corner of Market and Union streets, now occupied by the old Central passenger station. About \$250,000, it is estimated, will be expended for the proposed structure. Plans for the building are now being prepared, but have not been fully decided upon. It will be of brick, steel and concrete. Curtis Dougherty, Cincinnati, O., is chief engineer.

\$10,000 for Improvements.

The Goldsboro (N. C.) Street Railway Co. announces that it is re-establishing the service on one-half mile of its present system, and that as soon as the material can be ordered one mile of new track will be laid, two more cars will be put in operation and a pit and tracks will be laid into the car barn. There will be \$10,000 spent to improve the system. John L. Livers of Charlottesville, Va., is president, and Ernest L. Gentis of Goldsboro is vice-president and general manager.

FOREIGN NEEDS

Many Letters from Many Lands.

The care with which the MANUFACTURERS RECORD is read in many foreign lands is indicated by the constant receipt of letters from all parts of the world asking for information about American business matters.

It should be understood that these letters come from people with whom the MANUFACTURERS RECORD has no direct acquaintanceship, and that therefore in publishing them our readers in this country must make their own investigations as to the wisdom of business connections with the writers of such letters. Some very interesting developments have been brought about through the publication of extracts from the many foreign letters which we weekly receive.

Among the letters received within the last few days, extracts from which are published below, are one from the Black Sea region; one from Berlin; one from Karlsruhe, Germany; one from Rio de Janeiro, Brazil; others from Buenos Aires, Argentine Republic; Tokyo, Japan; Sao Paulo, Brazil; La Paz, Bolivia, and Caracas, Venezuela; Calcutta, India.

These letters indicate how widely the MANUFACTURERS RECORD is read in many foreign lands.

Australian and New Zealand Trade.

Longsdorf & Milbourne, 17 Battery Place, New York, write to the MANUFACTURERS RECORD:

"I returned to the United States to procure six or seven American agencies. I have always thought the mistake agents made was in carrying too many lines, and consequently not do justice to any one. I am limiting myself to a few, and those must be kindred, or in any case take me to the same class of trade. I have as a partner a competent Australian, here two months, who has sailed to Australia via London and South Africa. In addition to him, we have one American salesman. We desire to spend some time in the factory, so as to acquire a selling knowledge of goods. We call only upon wholesale ironmongers, machinery houses and large department stores who stock ironmongery lines and small machinery. It has been our experience that it is not so difficult to get wholesalers to stock, but the difficulty is to move the goods. It is our policy to first endeavor to get the wholesaler to stock the line, and just before it has arrived we call upon small dealers and consumers, machine shops, etc., and push sales for the account of the wholesaler. We expect their co-operation and the services of their salesmen. Most Australian salesmen take the line of least resistance and push only the article for which there is a ready sale, and will not spend time in introducing a new article. For this reason we often go with a wholesaler's salesman or else alone. We render daily sales to our principals, advising them whom we call upon, what goods they are stocking, the financial responsibility of the prospective customer, etc. In other words, we can be considered in the light of a direct representative. If our principals enjoy an existing business in Australasia we are content with a commission only. If it is a line entirely unknown to the Australasian market, in which there is a good deal of competition, consequently we have to do a great deal of propaganda work, we expect a small subsidy in addition to the commission."

For Representation in Bolivia.

Seenz y Dolz, P. O. Box 263, La Paz, Bolivia, write to the MANUFACTURERS RECORD as follows:

"We have been actively at work trying to get people to let us represent them in Bolivia as their agents direct. Manufacturers who desire to find a market for their goods in Chili, Peru and Bolivia can write to us, and I will be glad to give them all details they may require. Commerce in South America at present is not so very good, but we anticipate that it will improve in a very short time and furnish an excellent market. We import glass and tableware, iron, machinery, preserved food, fish, meat, wine, liquors, etc., and are in a position to bring about satisfactory results for people who

confide their interests to us. Our agents travel all over the country and visit and talk to the buyers personally."

Wants American Agencies.

G. Macrides, Samsoun, Black Sea, writes to the MANUFACTURERS RECORD as follows:

"I have just established a business for pushing the sale of goods not only from Europe, but also more especially from America. Your market is a strong outlet for the various products of Europe, where up to the present moment American industry has not made all the progress it might. Here it could combat with European goods and American products could be sold all along the coast of the Black Sea, and it could also successfully cultivate an as yet unexploited territory. Bring my name before the manufacturers of your country, and if possible recommend me to them. I am satisfied the demands in our own city would be great. Give me the names of some houses desirous of entering into commercial relations with my country, their terms and the conditions upon which they would be willing to place their interests with me. The esteem in which your valuable publication is held throughout our country leads me to believe that if I can get your assistance, my efforts will be successful."

Wants Agencies for Cuba.

Garcia & Rodriguez, P. O. Box 755, Havana, Cuba, write to the MANUFACTURERS RECORD as follows:

"We take the liberty of offering the services of our house as commission merchants and agents for importation and handling of goods from your country. It will give us pleasure to give full particulars as to state of the market and its needs. We are anxious to extend our business relations with your people, and we would like in that connection to get into contact with suitable houses who are looking for an outlet for their products in this republic. The principal things in which we are interested are hardware, manufactures of iron, carpenters' tools, sand and emery paper, piping for water service, towels, cement, wrapping paper, chemical products and medicinal supplies of all kinds. Our business embraces the whole territory of Cuba, and we are in a position to make satisfactory terms with anybody who will confide their interests to us. Our reference is R. G. Dun & Co."

Coffee and Salt Machinery.

Sues, de Perez Hermanos S. en C., Apartado De Correo 540, San Juan, Porto Rico, write to the MANUFACTURERS RECORD as follows:

"Our principal business relates to machinery and equipment and useful supplies for small merchants. We are studying a method of roasting coffee on the spot with apparatus that will not be costly, and we are already in receipt of catalogues and information from manufacturers in your country. We would like to get some information in regard to a mill of no great capacity for grinding salt, to be operated by electricity."

Agency in Germany.

Walter Alburg, 141 Flieger street, Berlin, N. O. 43, Germany, writes to the MANUFACTURERS RECORD as follows:

"After publication of my letter in your journal, I received a number of propositions regarding a German agency. I thank you for the kind attention you have given me, and I shall always be pleased to remember you further. Before closing I might mention that with reference to your paper I have written to several American firms for agency, always mentioning your name."

Corn Mills, Sewing Machines, Explosives, Etc.

Bernardino Iracheta, Buenos Aires, General Paz, Argentina, writes to the MANUFACTURERS RECORD as follows:

"The business in which I am engaged in this store is general merchandise, shoes and supplies, dry goods,

clothes, etc., for men and women, furniture, explosives for wells, machines for decorticating grain—hominy corn mills. I prefer machines worked by hand. Also small machines I can sell for crushing corn to feed fowls; sewing machines and various other articles, the names of which I will give you later in detail. I would like to get a few catalogues, if possible, and if the terms and conditions of sales are suitable I can do a good business. The goods ought to be delivered here and the drafts made on the Spanish Bank of Rio de la Plata or on the Bank of London, and it should be accompanied at the same time with the necessary shipping documents in order that I might honor them previous to receiving goods."

Various Kinds of Manufactures.

S. Garcia Hermanos, Caracas, Venezuela, writes to the MANUFACTURERS RECORD as follows:

"We have been engaged in business at this place for years, and are handling wholesale food supplies and the manufacture of soda. We would appreciate it very much if you could put us into communication with people interested in these lines. We would like to act as agents for them. The particular articles of interest to us are drugs, cotton, wool and silk textures, lace, stockings, buttons of all kinds, knives, scissors, glassware, hides, iron hardware, pasamentry, conserves, canned food, petroleum, paper, manufactures of aluminum, leather and supplies for shoemaking, etc."

Wants Leather and Paper.

Raacke & Co., Ruados Ourives, 87, Rio de Janeiro, Brazil, write to the MANUFACTURERS RECORD:

"We have found in the MANUFACTURERS RECORD many interesting things, and have asked some manufacturers for catalogues, mentioning in our letter the MANUFACTURERS RECORD. We are especially interested in the leather line (box calf and black), and all kinds of paper, such as packing, wrapping, letter, silk, etc. In case you can give the names of some of these manufacturers, we would appreciate this very much."

Hemp or Tagal Braids.

Tateish Trading Co., N. 7 Minami-Daikucho, Kio-bashi-ku, Tokyo, Japan, writes to the MANUFACTURERS RECORD as follows:

"We are exporting hemp or tagal braids to various countries. As we supply this line at advantageous price, we are ready to send samples. We supply material for the braids, and consequently we are situated in very favorable position to furnish this article. Simply to show this article, we attach a piece."

Woodworking Machinery.

Gehres & Schmidt, Karlsruhe 1 B., Germany, write to the MANUFACTURERS RECORD as follows:

"Give me the addresses of some firms making machinery for sawing and splitting wood and preparing wood for use as an insulator. I could sell two machines now in Russia, and I would also like to know the addresses of people making machines for sawing and splitting kindling wood; also machine-made wood-stave pipe casing."

From Brazil.

V. Lucci & Co., Rua Marechal Deodoro N. 4-A, Sao Paulo, Brazil, write to the MANUFACTURERS RECORD as follows:

"We take the liberty of calling your attention to our firm, and we shall be very glad to serve you in any matters relating to manufactures or to custom-house business at this place."

Inez Manufacturing Co., care Commercial Club, Tulsa, Okla., plans to construct cotton mill at Sand Springs. It is reported as to invest \$2,500,000 for structural-steel buildings, with plate-glass openings, 12-acre site, equipment of machinery, land developments for mill town, etc.

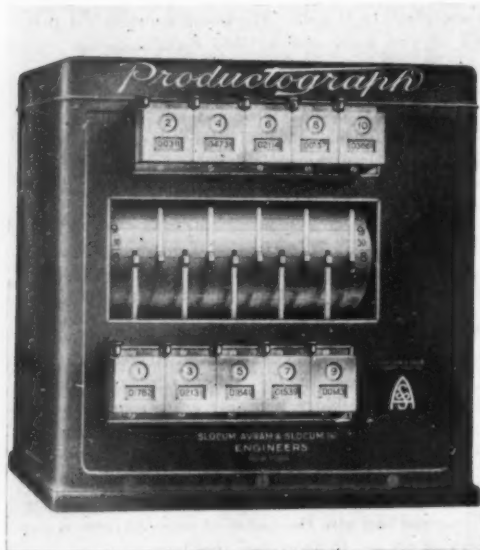
MECHANICAL

Illustrations and descriptions having news value pertaining to developments in machinery, mechanical devices and inventions will be considered for use in this department.

Automatic Recording of Machinery Operation and Output.

A manufacturer can now sit in his office and see the exact producing activity of every machine in his plant under a register system lately developed.

In order to get accurate reports and data on the operation of machinery in such plants for which its services were engaged as production engineer, the engi-



PRODUCTOGRAPH OF TEN-NEEDLE SIZE.

neering firm of Slocum, Avram & Slocum, Inc., 30 Church street, New York, has developed the "Productograph," an automatic device, which, when placed in the office of the plant owner or manager, and thence wired to machinery in the plant, will register and record such machinery operations as the exact starting and stopping time of machines, the stops during the day and their duration, the speed and its variations due to change of load from time to time, and finally count the output of whatever kind it may be. Such conditions as loss of time on machinery, faulty operation, inefficient workers, etc., are revealed by the Productograph charts. In many plants where there is little system, these delays may never become known. The manager, although aware that the operating efficiency is not what it should be, does not know definitely what the reason is.

The Productograph consists of a lead paper chart, spaced to show each hour and minute of the working day, mounted on a revolving cylinder, a series of magnets and a corresponding series of needles. When energized, the magnets attract the needles, thus causing lines to be drawn on the chart. The number of lines and their length indicate the operation and output of the machine. From the magnet coils of the Productograph wires are run to switches located on the various machines in the shop. The switch consists of a small cast-iron box, fastened with the switch arm connected with a revolving shaft or similar point where a record is wanted of a machine's operations. Inside the switch-box is a reduction gear, which can be made to operate in any ratio desired, but usually in some multiple of 10. For instance, for every 10 movements of the switch arm one contact is made, causing one line to be drawn on the chart in the Productograph. The reducing gear actuates a plunger in an air chamber, which makes the contact by bringing two springs together. Immediately after making a contact the plunger returns to the original position, so that no matter in what position the machine is left if stopped, the switch cannot be short-circuited.

The company states that the Productograph has been

used with success in machine shops, hardware manufacturing plants, paper mills, printing establishments, pumping stations, etc., and while no effort has been directed to the textile industry as yet, the machine is applicable to mules, looms, calico print, mangles, stenters, plating and warping mills, etc. In textile plants using thousands of such machines, the company advises installing a selective panel system, which reduces the cost of installation and yet attains the same results. In this system a Productograph of 100-needle capacity is used, which makes possible attachment to 100 looms, and by means of a switchboard similar to the ordinary telephone switchboard, another 100 machines can be switched into service, watched and brought to efficiency, thus taking hundreds consecutively until the entire equipment has been covered. Another advantage of this method is that any machine can at any time be switched into service if special need arises.

The owners of the machine claim that it can be located in Washington and connected to the Panama Canal, showing at the Washington end the time of opening and closing of the locks for passage of ships. The company also states that a large railroad company is considering its application to dangerous crossings to make a permanent record of the exact time of lowering and raising of gates and the ringing of the bell, while simultaneously recording the exact time of the trains passing over the crossing. The advantages of such a record are obvious in case of subsequent litigation following an accident.

Pillar Flame-Carbon Arc Lamps.

A new ornamental arc lamp of the flame-carbon type, which has been developed by the Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa., has a number of features which will make it popular with central stations for ornamental street lighting, and with owners of amusement houses, public halls, hotels, etc.

An important feature of the type "O" pillar flame-carbon arc lamp is its adaptability to practically all of the standard commercial circuits, the lamps being available for operation on 60-cycle alternating current, 10, 7½ and 6.6-ampere series circuits and 110-volt multiple circuits and direct current multiple circuits. The multiple type is generally used where a few lamps are desired for advertising purposes.



TYPE "O."

The standard glassware consists of an alba globe and a clear inner globe, and the lamp is so made that most of the light is thrown downward, but enough light is thrown upward to illuminate the fronts of buildings to a considerable height. This produces an agreeable effect in the lighting of "white ways." The outer globe can be readily raised and locked in a position to facilitate trimming the lamp and cleaning the globes.

The mechanism is in upright position above the globe, and is held firmly by three small upright rods, as shown in the illustration. Because of the diffusing glassware, these rods do not throw shadows on the surrounding buildings or street.

Either white or yellow light may be produced, depending upon the carbons used, and other color effects may be produced by using various combinations of colored inner and outer globes.

The intense light from the flame-carbon arc lamp, combined with the ornamental features of standards and brackets of tasteful design, makes an illuminating unit having a great advertising value.

National Yarn Mills, Belmont, N. C., is progressing with construction of plant heretofore reported. This company has completed its cotton warehouse and is erecting its one-story 340x128-foot mill building, in which it expects to install about 12,500 spindles for manufacturing fine combed yarns. Machinery contracts have not been awarded.

The Poole & Hunt Company.

With a capital stock of \$1,000,000 and bonds for \$500,000, the Poole & Hunt Engineering & Machine Co. has been formed as a reorganization of the Poole & Hunt Engineering & Machine Co. of Baltimore city, with extensive plant at Woodberry, Baltimore. This plant occupies a 20-acre site, and includes large foundry and machine shops, the foundry having an hourly capacity for 20 tons of iron and its cranes having a capacity up to 50,000-pound castings. Improved facilities are proposed as demanded. The new company's officers are: President, S. Proctor Brady, vice-president of the Baltimore Fidelity Warehouse Co., connected with the terminal facilities of the Western Maryland Railway; vice-president, German H. H. Emory; secretary, John A. Finney; treasurer, Robert P. Simpson, who was president of the former Poole & Hunt corporation. The enterprise was originally established in 1843, and since then has been known throughout the country for its important and extensive work. It made the dome of Capitol at Washington, and is now manufacturing the heaviest molded gears and gun carriages used for the heaviest battlehips of the United States.

The Cotton Movement.

In his report for July 17, Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight in 320 days of the present season was 14,376,882 bales, an increase over the same period last year of 709,200 bales. The exports were 8,808,349 bales, an increase of 408,371 bales. The takings were, by Northern spinners, 2,507,920 bales, a decrease of 41,744 bales; by Southern spinners, 2,945,044 bales, an increase of 206,833 bales.

Mississippi Cotton Mills Co.

Capitalized at \$250,000, the Mississippi Cotton Mills Co. has been organized and purchased the Bellevue Mills Co. with plant of 5000 ring spindles, 96 narrow looms, 48 broad looms, 26 cards, etc., at Moorhead, Miss.; Walter H. Carter, president, and Sheridan E. Cooper, secretary-treasurer, with offices at 208 Security Building, St. Louis.

The production of tripoli and of diatomaceous earth in 1913 was the largest in the history of the industry, being valued at \$285,821, more than twice as much as that of the year previous, when it amounted to \$125,446. The amount of tripoli produced in 1913 was 20,797 short tons, valued at \$216,581, and that of diatomaceous earth 6586 short tons, valued at \$69,240, of \$25,000.

The Board of Commerce of Knoxville, Tenn., J. L. Bowles, general secretary, is promoting a plan for subscription to a guaranty fund of \$250,000 by means of which industries in the community already may be stimulated and encouraged through additional capital and new industries may be located.

Rushton Cotton Mills, Griffin, Ga., will install 5000 spindles to replace worn-out spindles; will not install additional spindles, as was stated last week. This company operates 15,000 spindles, 400 looms, etc.

F. R. Hutchinson, the East Ohio Gas Co., Cleveland, O., announces that the convention of the Illuminating Engineering Society is to be held in Cleveland, September 21-25.

Barrow Cotton Mills, Winder, Ga., has been incorporated by L. S. Radford, J. M. Williams, R. S. Lanier and others; capital stock \$125,000.

Antietam Knitting Co., Hagerstown, Md., will rebuild its hosiery mill mentioned last week as burned at a loss

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ala., Birmingham.—Louisville & Nashville R. R., W. H. Courtenay, Chief Engr., Louisville, receiving bids until July 25 to construct viaduct on 1st Ave.; 2400 ft. long; 4-ft. roadway; two 8-ft. sidewalks of reinforced concrete; structure to be built jointly by city, Louisville & Nashville R. R., Southern Ry., Birmingham Ry., Light & Power Co. and Sloss-Sheffield Steel & Iron Co.; Louisville & Nashville R. R. in direct charge of construction; Julian Kendrick, City Engr. (Previously noted.)

Ark., Batesville.—Independence county, J. W. Scott, County Judge, let contract Memphis Bridge Co., Memphis, Tenn., to build two steel bridges; also let contract Hanford & Fugett Contracting Co., Batesville, to erect 3-arch concrete bridge; cost \$3489. (Previously noted.)

Fla., Arcadia.—Dist. No. 4 of DeSoto county will probably vote in Oct. on \$350,000 bonds to construct bridges and roads. Address County Commrs.

Fla., Jacksonville.—City will construct reinforced concrete bridge on Main St. over Hogans Creek; bids until Aug 10; Geo. M. Powell, Chrmn. Committee on Public Works of Board of Bond Trustees. (See Machinery Wanted.)

Fla., Tampa.—Atlantic Coast Line R. R., E. B. Pleasants, Ch. Engr., Wilmington, N. C., is reported to build bridge across Hillsborough River at Cass St.; single lift of bascule type; clearance 75 ft.; span 88 ft.; steel construction.

Ky., Birds Point.—Mobile & Ohio R. R., R. V. Taylor, V.-P. and Gen. Mgr., Mobile, Ala., is reported as having set aside \$5,000,000 to construct bridge across Ohio River from near Birds Point to Cairo, Ill.; also reported as to invest \$1,122,000 for new equipment; Mr. Taylor wires Manufacturers Record: "Certain financial arrangements for future provide construction if it should be necessary to build; no details determined."

Ky., Louisville.—Board of Public Works will open bids July 31 to construct reinforced concrete bridge over Beargrass Creek at Dupuy St.; cost about \$11,000.

Ky., South Portsmouth.—Chesapeake & Ohio Northern Ry. Co., M. J. Caples, Pres., Columbus, O., will construct bridge across Ohio River from short distance above mouth

of Little Scioto River, near Sciotoville and Portsmouth, O., to South Portsmouth, Ky.; 2 cantilever spans, 750 ft. each; 24 spans plate girder, 80 ft. each; bids received about Aug. 1; reports state \$2,000,000 will be cost. (Chesapeake & Ohio Ry. Co., M. J. Caples, V.-P., Columbus, lately noted considering locations for bridge.)

La., Shreveport.—Caddo Parish Police Jury let contract Blodgett Construction Co., Kansas City, Mo., to construct steel bridge across Twelve-Mile Bayou; cost \$10,000; J. T. Bullen, Parish Engr.

Md., Lonaconing.—City let contract Whitaker & Diehl, Harrisburg, Pa., at \$5374 to construct bridge over George's Creek; Wm. Harvey, City Engr. (Call for bids lately noted.)

N. C., Asheville.—Buncombe County Commissioners, Baltimore Estate and Asheville Power & Light Co. are reported to construct concrete bridge across French Broad River; cost \$12,000.

S. C., Florence.—Florence county will construct bridge at Jeffrey's Creek causeway; reinforced concrete and steel; one span; 60 ft. long; concrete foundations; cost about \$3000; Jas. B. McBride, County Supervisor.

Tenn., Maryville.—Blount county will construct reinforced concrete arch bridge over Nine-Mile Creek at Howard's Mill; two 50-ft. spans; 100 ft. long, including abutments; 20 ft. high; 12-ft. clear roadway; Bridge Committee, J. L. Clark, Chrmn., receives bids until July 25. (See Machinery Wanted.)

Tenn., Sevierville.—Sevier County Road Commrs., H. C. Butler, Chrmn., let contract Lutten Bridge Co., Nashville, Tenn., at \$4497 to erect 2 concrete bridges; 75 and 30-ft. spans; F. G. Phillips, Engr. (Bids lately noted.)

Tex., Corpus Christi.—Nueces County Commissioners invite bids until Aug. 17 to construct causeway across Nueces Bay, connecting mainland of Nueces and San Patricio counties; concrete construction; length, 8500 ft.; width, 65 ft.; concrete steel bridging at Corpus Christi end; drawbridge span covering channel of bay; remaining distance, about 6000 ft., will be protected sand fill having 40-ft. macadamized roadway on top, with beach slopes of brush mats or baggots; Nueces county voted \$165,000 bonds for construction; Road Dist. No. 1 of San Patricio county (including

cities of Portland, Gregory and Taft) voted \$50,000 bonds to build San Patricio county approach; Engrs., Terrell & Ranney, Fort Worth. (Previously noted.)

Tex., Dallas.—Dallas county will construct bridge over Mountain Creek at crossing of upper Fort Worth Rd.; cost \$4500. Address County Commrs.

Tex., Dallas.—Dallas County Commrs. ask bids until Aug. 1 to construct lately described 3 bridges—one 100-ft. and one 126-ft. fixed spans, and one 212-ft. swing bridge; cost about \$45,000; J. F. Witt, County Engr. (See Machinery Wanted.)

Tex., Galveston.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Chief Engr., authorized appropriation of \$10,447 and \$11,549 for extension of two bridges on Southern division. (See Railway Shops, Terminals, etc.)

Tex., Lockhart.—Caldwell county voted \$3000 bonds for bridge improvement. Address County Commrs.

Va., Danville.—Southern Ry. Co., B. Herman, Ch. Engr., Washington, D. C., will erect double-track bridge across Dan River in connection with 12.95 mi. double-track construction, Robert Russell, Contr., headquarters, Danville.

Va., Lynchburg.—Southern Ry. (B. Herman, Ch. Engr., Washington, D. C.), Norfolk & Western Ry. (J. E. Crawford, Ch. Engr., Roanoke) and Chesapeake & Ohio Ry. (F. I. Cabell, Ch. Engr., Richmond) agreed to construct reinforced concrete bridge over their 3 systems and James River at foot of 7th St., costing about \$300,000; 1700 ft. long and 55 ft. above low water; city to contribute \$50,000 and Amherst county provide \$10,000 approach on Amherst county side of river; H. L. Shaner, City Engr. (Lately noted.)

Va., Portsmouth.—Norfolk county will repair Larchmont Bridge No. 2 on Jamestown Blvd.; G. Tayloe Gwathmey, Chrmn. Com. of Roads and Bridges, 722 Citizens' Bank Bldg., receives bids until July 28. (See Machinery Wanted.)

Va., Salem.—City will construct 3 concrete bridges. Address The Mayor.

W. Va., Pentress.—Morgantown & Wheeling Ry. Co. will soon ask bids to construct bridge; one 136-ft. through riveted truss and one 50-ft. deck girder; Robt. D. Hennen of Monongahela Valley Engineering Co., Engr.

W. Va., Wheeling.—Penn Bridge Co., Beaver Falls, Pa., has contract at \$17,546 to furnish polree trestles, etc., at Dams Nos. 19 and 23, Ohio River.

CANNING AND PACKING PLANTS

Fla., Titusville.—Jellies, etc.—Indian River Mfg. Co., capital stock \$10,000, organized by H. Edwin Rogers of Rogers & Paxton and others to mfr. Jellies, etc.

Ga., Savannah.—Hub Fish & Oyster Co. Incptd. by E. H. Abrahams, A. Rausin and A. J. Cohen.

La., Kentwood.—Kentwood Canning Co. is being organized to build canneries.

CLAYWORKING PLANTS

Ga., Rome.—Bricks.—Alto Face Brick Co., capital stock \$30,000, Incptd. by John H. B. Morrison, Caroline Morrison and Cora T. Trammell.

Ga., Rockmart.—Bricks.—Chas. J. Haden, Atlanta, and others contemplate establishing brick plant.

N. C., Blounts Creek.—Bricks.—Beaufort County Brick Co., Wilmington, N. C., Incptd.; capital \$10,000; A. K. Tayloe, Aurora, N. C., Pres.; W. C. Rodman, Warrington, N. C., Secy.; N. C. Toler, Mgr.; estimated capacity, 10,000 bricks daily.

Tenn., Furyear.—Bricks.—Dixie Brick & Tile Co. reorganized and increased capital stock; is completing improvements, which include installation of new mechanical, drying and burning equipment; increased capacity to 50,000 daily; mfr. face brick at present; new equipment includes machinery for future mfr. of hollow building tile or fireproofing. Further advices state: New mechanical equipment consists of face brick cutter, machine front and dies, fan and dryer equipment; will purchase new steam shovel; has bought conveyor system and hoisting outfit for pit; 5 new 30-ft. round down-draft kilns to be erected, with waste heat drying system; total cost of improvements about

\$20,000; Jas. P. Williams, Cons. Engr., 2803 N. Kingshighway, St. Louis, temporarily in charge; Mr. Williams to be addressed at Furyear.

Tex., Abilene.—Bricks.—Abilene Press Brick Co., capital stock \$25,000, Incptd. by E. B. Bynum, Oscar Parker and W. J. Fulwider.

COAL MINES AND COKE OVENS

Ark., Argenta.—Frank O. Cook, care F. O. Cook Realty Co., is interested to promote development of coal properties.

Ky., Hazard.—Middle Fork Coal Co., capital \$3000, Incptd. by B. F. Wooten, C. G. Bowman and Jesse Morgan.

Ky., Prestonsburg.—Big Sandy Consolidated Fuel Co., capital \$250,000, Incptd. by B. F. Friend, C. R. Brown and D. C. Outcalt.

Ky., Wofford.—Letz Jellico Coal Co., Williamsburg, Ky., lately noted (under Williamsburg) Incptd., capital \$100,000, organized; J. W. Latham, Pres.; Ross T. Elliott, V.-P.; J. Robt. Zimmerman, Secy., Treas. and Mgr.; develop 1000 acres; daily capacity 800 tons; date of opening bids on machinery not set, but about Aug. 15.

Mo., Joplin.—Minden Coal Co., capital stock \$25,000, Incptd. by H. J. Semberg, D. L. White and J. G. Starr.

Tenn., Harriman.—Conger Coal Co., capital stock \$50,000, Incptd. by John E. Patton, Chas. C. Moore, Jas. M. Adams and others, all of Chattanooga; purchased Baker Mining Co.'s properties near Harriman and continue development; maintain office in Chattanooga.

Va., Dante.—Cinchfield Coal Corp. let contract Roberts & Schaeffer Co., McCormick Bldg., Chicago, to construct Marcus patent coal tippie for installation Dante mine; cost about \$55,000.

W. Va., Virginville.—Clifton Coal Co., 223 4th Ave., Pittsburgh, Pa., organized with L. S. Burnett Pres.; Thos. Watson, V.-P.; R. M. Atkinson, Secy.-Treas.; A. G. Hunt, Supt.; develop 3200 acres; present output 500 tons; will increase to 1500 tons; purchase additional machinery later. Address machinery proposals to President. (Lately noted Incptd., \$100,000 capital stock, and as acquiring property of Brooke Coal Co.)

COTTON COMPRESSES AND GINS

Ala., Piedmont.—J. P. Woolf and A. A. Aderholdt will erect gin; 1 story; brick; fireproof; concrete floors; five 70-saw gins; contractor, Mr. Morris of Jacksonville.

Ala., Piedmont.—Piedmont Ginning Co. and Hebble Ginning Co. consolidated; will remove Hebble equipment to Piedmont plant, which will be enlarged; former ginneries had four 70-saw gins each; new gins will have twelve 70-saw gins.

Ark., Lovoca.—Lovoca Gin Co., capital \$10,000, Incptd. by J. F. Hogan and others.

Ark., Lepanto.—Planters' Gin & Mercantile Co., capital \$5000, Incptd. by W. E. Pritchett, W. M. Potter and Sam Monday.

Ark., McGehee.—Geo. B. Ewing, Sam Wolchansky and others are interested in erection of gin; cost \$10,000.

Ark., Okolona.—Farmers' Gin Co., capital \$10,000, Incptd.; T. M. East, Pres.; A. G. May, V.-P. and Secy.; W. C. Hare, Treas.

Ky., Hickman.—John B. Hopson will build 4-stand cotton gin.

Miss., Sunflower.—Mosby-Dever Gin Co., capital \$10,000, Incptd. by M. W. Mosby, Jr., L. L. Dever and others.

Okla., Boynton.—Farmers' Gin & Grain Co., lately noted Incptd., capital stock \$10,000, by A. C. Trumbo and others of Muskogee, Okla., organized to deal in cotton and grain; purchased business of P. B. Wolfinger, including gin and grain elevator; secured new machinery and will lease gin this season to Combs & Alsbrook, Coweta. (See Miscellaneous Enterprises.)

Tex., Claytonville.—Farmers' Union will build gin.

COTTONSEED-OIL MILLS

Miss., Meridian.—Eagle Cotton Oil Mill will install battery of boilers, 2500-ton ice-storage plant and cement floors in mill.

S. C., Denmark.—Denmark Oil & Fertilizer Co., capital stock \$30,000, Incptd. by G. M. Dickinson and M. J. Dickinson.

Tex., Marshall.—Marshall Cotton Oil Co. (lately noted Incptd., capital stock \$50,000)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

organized; E. Key, Pres.; P. H. Manire, V.-P. and Mgr.; W. L. Martin, Secy.-Treas.; purchased plant of Marshall Oil Co.; daily capacity, 50 tons cottonseed products; no machinery needed.

DRAINAGE SYSTEMS

Mo., Kirksville.—Adair Drainage Dist. will construct 2 dams across Charlton River of sufficient height to run water through drainage ditch; bids until Aug. 1; Wm. Motter, Chrmn. Dist. (See Machinery Wanted.)

N. C., Bolton.—Columbus County Drainage Dist. No. 2 will construct drainage system; length of canals, 45 mi.; excavation, 1,500,000 cu. yds.; bids until Aug. 6; Frank P. Graves, Chrmn. Commrs. (See Machinery Wanted.)

N. C., Salisbury.—Grant's Creek Drainage Dist., Rowan county, will make previously-noted improvements; clear right of way and cut (about) 14½-mi.-long ditch along Grant's Creek; about 491,866 cu. yds. material; bids until Aug. 3; C. M. Miller, Engr. and Supt., Salisbury. (See Machinery Wanted.)

Tenn., Union City.—Harris Fork Drainage Dist. No. 3, J. H. Pickle, Secy. Board of Directors, receives bids until Aug. 4 for about 446,700 cu. yds. ditch work with floating dredge and about 21,000 cu. yds. with teams; also for clearing 125 acres right of way; W. C. Kelly, Engr., Union City. (See Machinery Wanted.)

ELECTRIC PLANTS

Ark., Elson.—Improvement Dist. organized; retained Albert C. Moore, Bartlett Bldg., Joplin, Mo., as engineer to design and supervise construction of electric-lighting plant and water-works; cost about \$40,000.

Fla., Ocala.—City votes in September on \$75,000 bonds to construct electric-light plant. Address The Mayor.

Ga., Chatsworth.—City is considering plans prepared by J. B. McVary Co., Atlanta, for electric-light plant.

Ky., Hazard.—Perry County Coaleries Co. will install electric power plant at coal mines; W. J. Von Borries, 110 S. 7th St., Louisville, is interested.

Ky., Lexington.—Transylvania University let contract Frank Corbin, Lexington, to install electric-light plant.

La., Winnsboro.—Carl Ship is reported as interested in erection of electric-light plant.

Md., Ocean City.—City is considering construction of electric-light plant. W. B. S. Powell, Mayor.

Mo., Drexel.—A. J. Steele, owner Adrian electric-light plant, Adrian, Mo., petitioned Town Council for franchise to furnish electricity; proposes to extend transmission lines into Drexel.

Md., Rising Sun.—City votes Aug. 3 on bonds to construct electric-light plant and water-works. Address The Mayor.

Mo., Kirkswood.—City contemplates purchasing and installing 150 H. P. boiler and smokestack, 2 generators, 100 K. V. A. and 200 K. V. A. generators and engines, directly connected, with exciter and 2 generator panels; W. A. Trussell, Supt.

Mo., Meadville.—City is considering installation of electric-light plant. Address The Mayor.

Mo., Pattonburg.—City voted \$10,000 bonds to construct electric-light plant. Address The Mayor.

N. C., Wake Forest.—City, J. L. Bullard, superintendent electric-light plant, will not enlarge plant before February, 1915. (Lately noted asking prices on equipment.)

N. C., Winston.—Town invites bids on electric-light plant; I. V. Turner, Town Clerk. (See Machinery Wanted.)

Okla., Blackwell.—City will not vote on bonds for electric plant. (Lately reported.)

S. C., Winnsboro.—City is considering \$10,000 bond issue to enlarge electric-light system. Address The Mayor.

W. Va., Kimball.—Kimball Light & Water Co., capital \$30,000, incptd. by C. H. Boardman of Vivian, T. King, G. N. Proctor, J. W. Davy and D. King of Boston, Mass.

W. Va., Kenova.—Ohio Valley Electric Ry. Co., W. W. Magoon, Gen. Mgr., will install three 455 H. P. boilers with stokers in electric plant.

FERTILIZER FACTORIES

S. C., Denmark.—Denmark Oil & Fertilizer Co., capital stock \$30,000, incptd. by G. M. Dickinson and M. J. Dickinson.

Va., Seaford.—Rowe Bros. & Sons Co., Hampton, Va., will rebuild plant reported burned; erect 50x80-ft. building and connect-

tions; plans not decided; considering fire-proof construction.

Va., Norfolk County.—Pamlico Chemical Co., capital stock \$150,000, incptd.; J. E. Cowell, Pres.; R. R. Flending, V.-P.; Wm. Bragaw, Secy.; all of Washington, N. C.

FLOUR, FEED AND MEAL MILLS

Ala., Foley.—W. A. Stoddard contemplates installing feed mill.

Ga., Young Harris.—Wm. Alexander will establish roller mill.

Ky., Sharp, R. F. D. from Benton.—Sharp Milling Co. organized with S. H. King, Pres.; J. C. Rountree, V.-P.; P. M. Rountree, Secy.-Treas.; will rebuild burned flour and corn mill. (Lately noted incptd. with \$5000 capital stock.)

Md., Easton.—W. R. Kinsey will remodel flour mill.

Md., Mt. Airy.—Farmers' Milling & Grain Co. has placed order for machinery for 175-barrel flour mill; September delivery. (Lately noted to rebuild burned mill.)

Mo., St. Joseph.—Aunt Jemima Mills Co., Robt. R. Clark, Pres., will increase daily capacity of corn mill from 1800 to 3000 bus.; erecting addition to plant at 2d and Edmond Sts.; also erect warehouse, 25x100 ft., with capacity of 8 cars; present wheat flour capacity of mill, 1000 bbls. daily. (Previously noted.)

Tenn., Fordtown.—A. S. and E. M. Hall are erecting 3-story-and-basement mill building; let contract for machinery for 50-bbl. mill.

Va., Gate City.—W. P. McConnell ordered machinery for 30-bbl. flour mill.

Va., Pamplin.—T. O. Singleton ordered machinery for 30-bbl. flour mill.

FOUNDRY AND MACHINE PLANTS

Ala., Mobile.—Concrete Machine.—A. J. Powers, 158 N. Hallett St., contemplates organizing company to mfr. patented machine to automatically spread, float and finish concrete paving.

Md., Baltimore.—Gearing, Machinery, etc.—Poole & Hunt Engineering & Machine Co., \$1,000,000 capital stock and \$500,000 bonds, formed as reorganization of Poole & Hunt Engineering & Machine Co. of Baltimore City; has extensive plant on 20-acre site, including foundry and machine shops, etc.; foundry has hourly capacity for 20 tons iron, cranes handle castings up to 50,000 pounds, etc.; plans improved facilities as demanded; S. Proctor Brady, Pres.; German H. H. Emory, V.-P.; John A. Finney, Secy.; Robt. P. Simpson, Treas.

Mo., Kansas City.—Foundry, etc.—Board of Education voted to install machine shop, foundry, pattern-making forge and blacksmith shop in Central High School.

Mo., Kansas City.—Engines.—Faultless Engine Co. increased capital stock from \$12,000 to \$50,000.

Tex., Galveston.—Structural Steel.—Metals Warehouse Co. will, in connection with enlargement of storage and distributing facilities, install structural steel fabricating plant and equipment for cutting, bending and twisting steel.

Tex., San Antonio.—Pump Switches.—Automatic Pump Tell-Tale Switch Co., capital stock \$2000, incptd. by T. W. Robertson, C. M. Chambers and J. Paul Howland.

GAS AND OIL ENTERPRISES

Ark., Nashville.—Perpetual Oil & Gas Co., capital \$50,000, organized with W. H. Toland, Pres.; J. B. Hill, V.-P.; W. R. Pruitt, Secy.; R. C. Hawley, Mgr.

Fla., Miami.—Gas Plant.—Miami Gas Co. issued \$200,000 bonds for improvements in local system, additional pipe lines, container and other equipment, etc.; container will have capacity 200,000 cu. ft.; N. Van Court, Local Supt.

Ga., Newnan.—Newnan Gas Co., capital stock \$10,000, incptd. by W. M. Jenkins and F. S. Carmack. (Mr. Jenkins and others lately noted as having petitioned city for gas plant franchise.)

Ky., Central City.—Central Gas Co., capital \$50,000, incptd. by J. K. Freeman, Jr., S. J. Gish and L. L. Dunham.

Okla., Aylesworth.—Sylvia Oil & Gas Co., capital stock \$30,000, incptd. by S. A. Brown and Harry A. Brown of Aylesworth and J. H. Jones of Sylvia, Kans.

Okla., Bartlesville.—Corrigan Operating Co., capital stock \$40,000, incptd. by T. J. Corrigan, Elizabeth Corrigan and Roy Neaver.

Okla., Blackwell.—State Line Oil & Gas Co., capital \$5000, incptd. by C. J. Neal, Frank Kenan and J. W. Randall.

Okla., Boynton.—Boynton Gas & Electric Co., capital stock \$5000, incptd. by J. H. Ogle, Boynton; John R. Harris, Fayetteville, Ark., and Urie D. Harris, Muskogee, Okla.

Okla., Carter.—Ree Oil & Gas Co., capital \$15,000, incptd. by L. I. Lyon and Dr. J. M. Denby of Carter and Geo. H. Gilbert of Jayton, Tex.

Okla., Durant.—Achille & Oklahoma Oil Co., capital \$25,000, incptd. by W. S. Sterrett of Durant, B. B. Terry of Dallas, Tex., and H. T. Shepherd of Hugo, Okla.

Okla., Durant.—Climax Oil Co., capital stock \$30,000, incptd. by J. R. Smith, Fred J. Harle, James Downen and L. F. Lee.

Okla., McAlester.—Compelubbe Oil & Gas Co., capital stock \$35,000, incptd. by Columbus Compelubbe, T. R. Pennington and E. M. Fry.

Okla., Newkirk.—Spreading Adder Oil & Gas Co., capital stock \$3900, incptd. by Robert Dunlop and A. A. Slosson of Newkirk and Leo Meyer of Oklahoma City.

Okla., Oklahoma City.—A. W. Lee Oil Co., capital stock \$6000, incptd. by A. W. Lee, J. L. Dryer and K. S. Lee.

Okla., Tulsa.—Lucky Oil Co., capital stock \$142,000, incptd. by Judson F. Ayers and Chas. F. Noble of Tulsa and Lucien L. Morrison of Kansas City, Mo.

Okla., Woodville.—Woodville Oil & Gas Co., capital \$10,000, incptd. by W. F. Fundeburk, Mangum, Okla.; D. D. Thorn, Dexter, Tex., and J. W. Madden, Denison, Tex.

Tex., Galveston.—Galveston Oil & Export Co., capital stock \$15,000, incptd. by A. B. Snoddy, G. A. Glasscock and C. G. Forshey.

Tex., Houston.—Bossier-Caddo Oil Co., capital stock \$3500, incptd. by Sam T. Robb, John L. McMeans and C. C. Ballantine.

Tex., Kennard.—Kennard Oil & Mfg. Co., capital stock \$15,700, incptd. by C. A. Westerman, W. H. Spinks and J. C. West.

Tex., San Angelo.—San Angelo Oil & Gas Co. organized with W. A. Guthrie, Pres.; M. B. Pulliam, V.-P.; Jerry Y. Rust, Treas.; M. E. Treadwell, Secy.; R. J. Fitzgerald, Field Mgr.; let contract A. Hudson at \$9000 to drill well 2000 ft. deep and furnish casing.

Tex., Summerfield.—Summerfield Oil & Development Co., capital stock \$2000, incptd. by J. H. Beall, A. Dixon and J. D. Jay.

Tex., Wichita Falls.—Oil Refinery.—Avis-Wood Oil & Refining Co. incptd. by J. D. Avis, W. T. Wood and W. F. Weeks.

W. Va., Mannington.—Middle Run Oil & Gas Co., capital stock \$25,000, incptd. by Max Jaffe, Jesse A. Mason, Harry C. Anderson and others.

W. Va., Parkersburg.—Sycamore Oil Co., capital stock \$10,000, incptd. by P. J. Townsell, R. F. Murphy, W. S. Mercereau, F. G. Davis and others.

ICE AND COLD-STORAGE PLANTS

Fla., Jacksonville.—Morris & Co. (main office, Chicago, Ill.) have plans for plant; erect 2-story brick building, 175 ft. deep; install refrigerating equipment; also erect galvanized shipping shed.

Fla., Winter Park.—Fruit Growers' Assn. is reported as contemplating installation of pre-cooling plant.

Miss., Meridian.—Eagle Cotton Oil Mill will install 2500-ton ice-storage plant. (See Cottonseed-Oil Mills.)

LAND DEVELOPMENTS

Ala., Birmingham.—Ellenen City Land Co., capital stock \$3000, incptd.; Felix I. Tarrant, Pres.-Treas.; D. W. McMillan, V.-P., and F. T. Frierson, Secy.

Ala., Burnsville.—Red Land Co., capital stock \$10,000, incptd.; purchased 1000 acres near Burnsville, will divide into small farms and sell; Calvin Young, Pres.; G. Bowie Smith, Secy.-Treas., both of Greensboro, N. C.

Ala., Mobile.—American Spineless Cactus Co., capital \$2000, incptd. by H. A. Longshore, J. H. Lyons and H. T. McBrown to grow spineless cactus and other nursery plants.

Ala., Mobile.—St. Elmo Fruit Farms Co., capital \$7000, incptd.; W. M. Meredith, Pres.; Zoe A. Meredith, V.-P.; Rudd T. Neal, Secy.-Treas.

Ala., Montgomery.—City Development Co., capital stock \$5000, incptd.; H. C. Davidson, Pres.; T. H. Moore, V.-P.; L. B. Farley, Treas.; C. M. Smith, Secy.

Ala., Theodore.—F. J. Bohan, St. Louis, Mo., purchased about 500 acres of Blackmer tract; will clear, improve and plant in Satsuma oranges; divide property into various-sized units and sell.

Fla., Daytona Beach.—Halifax Land Co. (previously noted incptd. by T. E. Fitzgerald

and F. N. Conrad of Daytona and Bert Fish, Deland, Fla., to develop 40 acres) will develop Gamble, Bostwick and Ruger properties as Bostwick Park; double width of Silver Beach Ave., creating boulevard; subdivision tentatively platted into 187 lots, in addition to property on which E. L. King is erecting \$80,000 dwelling, lately noted (under Dwellings).

Fla., Jacksonville.—Hockaday Fruit Co., capital stock \$10,000, incptd.; W. W. Hockaday, Pres.; J. B. Hockaday, V.-P.; S. W. Rhoades, Secy.-Treas.

Ga., Atlanta.—Silver Lake Estates, capital stock \$400,000, incptd. by L. P. Bottenfield, H. C. Bagley, Wm. Owens and others; will develop residential suburb.

Ga., Quitman.—N. E. Marshburn, Lagrange, Ga., is reported to plant 1000 acres in cantaloupes.

Ky., Central City.—Central Land Co., capital \$300,000, incptd. by J. H. Small, S. J. Gish and L. L. Dunham.

La., New Orleans.—Metropolitan Improvement Co., capital stock \$500,000, incptd.; Rev. J. L. Wilson, Pres. and Gen. Mgr.; Rev. John Marks, V.-P.; Rev. Thos. F. Robinson, Secy.; Rev. W. J. M. Price, Treas.

Miss., Hattiesburg.—Conn Bros., A. L. Conn, Mgr., will cut timber from tract lately purchased in Forest county; also develop farming and stock-raising lands. (See Lumber Manufacturing.)

Mo., St. Charles.—City contemplates voting July 23 on \$30,000 park bonds. Address The Mayor.

N. C., Palmetto Island.—Palmetto Island Co., R. C. Mullican, Secy.-Treas., Hamlet, N. C., owns for development 50 acres in town of Hamlet, 100 improved building lots at Carolina Beach, N. C., and 20,000 acres at Palmetto Island; develop latter for summer and winter resort; car company is surveying property for street railway. (Lately noted incptd. at N. C., Southport, with \$1,000,000 capital.)

LUMBER MANUFACTURING

Ala., Troy.—J. P. Wood will establish sawmill.

Ark., Millville.—McIntyre Lumber Co., capital \$50,000, incptd. by J. F. McIntyre, R. R. McIntyre, R. A. McIntyre and J. D. Burbank.

Ga., Savannah.—Southern Seaboard Lumber Corp., capitalized at \$1,700,000, formed as merger of South Georgia Lumber Co., Georgia-Carolina Lumber Co. and East Georgia Sawmill & Lumber Co.; owns large mills and timber land tracts; M. A. Cheney, Pres., Savannah; A. E. G. Goodrich, V.-P., New York. (Previously noted.)

La., De Quincy.—Powell Lumber Co., Lake Charles, will build sawmill; purchased timber and will develop.

La., Oak Grove.—Frank Jones Co., lately noted to install planing mill, has sawmill and planing mill; will erect drykiln of 20,000 ft. capacity and wants bids on equipment; daily capacity of plant 25,000 ft. yellow pine lumber. (See Machinery Wanted.)

La., Shreveport.—Weaver-Hearne Lumber Co., capital stock \$20,000, organized; S. P. Weaver, Pres.; T. S. Weaver, V.-P.; W. H. Hearne, Secy.-Treas.; acquires sawmill and timber holding of former Brown-Bridges Lumber Co. at Couchwood, La., and plans increasing capacity; also contemplates drilling one or more water wells on timber property.

Mississippi.—Croan & Griffin, Shepherds-ville, Ky., purchased timber land and are reported to develop.

Miss., Clyde.—Lamar Lumber Co. will improve plant and increase capacity.

Miss., Hattiesburg.—Conn Bros., A. L. Conn, Mgr., lately noted purchasing section pine timber in Forest county, will install sawmill; cost \$2000; daily capacity 20,000 ft. rough lumber; develop land for farming, etc. (See Land Developments.)

Miss., Moss Point.—W. H. McInnis and Jesse W. Thompson purchased plant of Robinson Land & Lumber Co. and will improve; operated as Phoenix Planing Mill Co.

Miss., Piquette.—Rosa Lumber Co. will rebuild sawmill and boiler-house burned at loss of \$30,000.

S. C., Charleston.—Flint River Cypress Timber Co. (lately noted incptd., capital stock \$200,000, by E. H. Jennings and C. J. Baker) organized as holding company for comparatively small tract cypress timber.

Tex., Glazier.—Glazier Lumber Co. (lately noted incptd., capital stock \$8000) organized; J. F. Johnson, Pres.; S. Nunn, V.-P.; Thos. Waters, Secy.-Treas.; will erect galvanized iron building; construction by company.

Va., Clinch.—Sulphur Springs Lumber Co. is proceeding with previously-noted development of 4000-acre timber boundary, purchased (stumpage basis) from Hagan estate; boundary on south side Stone Mountain, Scott county; 7-mi. tram road under construction, but eventually build about 12 mi.; building circular mill, estimated daily capacity about 25,000 ft.; cost of tram roads, mill and logging equipment, about \$25,000.

W. Va., Charleston.—Builders' Lumber & Supply Co., H. B. Miller, Gen. Mgr., inceptd.; capital stock \$20,000; officers not elected; lease old plant of W. L. Branch; install sander, 14-in. molder, end matcher, dado and pocket machines. (See Machinery Wanted.)

W. Va., Charleston.—C. L. Monger Lumber Co. will hold meeting on Aug. 12 to consider increase in capital stock from \$500,000 to \$600,000.

MINING

Ark., Zinc.—Zinc—Jack Pot Mining Co., capital \$5000, inceptd. by T. E. McClure, W. W. Wilson and L. L. Brown.

Tenn., Neubert.—Tennessee Marble Corp., W. P. Hofferbert, Prest., 323½ Clinch Ave., Knoxville, Tenn., will develop 70-acre tract of marble deposits; not ready to install equipment. (Lately noted inceptd., \$500,000 capital.)

Tex., San Antonio.—Sand and Gravel.—Hatch Sand & Gravel Co., capital stock \$10,000, inceptd. by H. J. Hatch, C. Wedemeyer and C. B. Hatch, Jr.

MISCELLANEOUS CONSTRUCTION

Ark., Little Rock.—Heating System.—Central Heating & Mfg. Co. let contract American District Heating Co., North Tonawanda, N. Y., for lately-noted reconstruction; replace present hot-water system with steam-heating system; estimated cost \$205,000.

Fla., Jacksonville.—Pier.—Seaboard Air Line Ry., W. D. Faucette, Ch. Engr., Norfolk, Va., is reported to construct pier extending from bulkhead front out to deep water; has bulkheaded Hogan St. for width of street and will fill in space bulkheaded with sand from river; pave with vitrified brick approach to docks and portion added to street end when filled in.

Ga., Atlanta.—Mausoleums.—Georgia Mausoleum Co., W. C. Webber, Gen. Mgr., 522 Candler Bldg., having plans prepared by A. Ten Eyck Brown, Archt., 607 Realty Trust Bldg., Atlanta, for mausoleums at Augusta, Columbus and Dublin. Augusta structure 125x31 ft., with side wings 18 ft. high, and 25-ft. chapel, capacity 300 crypts, costing \$40,000. Columbus and Dublin structures of about same dimensions, capacity, cost, etc. Separate contracts for stone, terra-cotta, marble, bronze, roofing and waterproofing. Has begun construction 3 Atlanta mausoleums previously noted, 153x62 ft. each, with side wings 18 ft. high, and 25-ft. chapel, capacity 600 crypts each; reinforced concrete; stone and glazed terra-cotta; marble tile floors, bronze windows and doors, etc.; all contracts let except for metal; Atlanta mausoleums cost \$90,000 to \$100,000 each; concrete work by Mausoleum Construction Co., Atlanta.

Ga., Augusta.—Mausoleum.—Georgia Mausoleum Co., Atlanta, will build \$40,000 mausoleum. (See Ga., Atlanta.)

Ga., Columbus.—Mausoleum.—Georgia Mausoleum Co., Atlanta, will build \$40,000 mausoleum. (See Ga., Atlanta.)

Ga., Dublin.—Mausoleum.—Georgia Mausoleum Co., Atlanta, will build \$40,000 mausoleum. (See Ga., Atlanta.)

La., Baton Rouge.—Levee.—Board of State Engrs., 213 New Orleans Court Bldg., New Orleans, asks bids until July 28 to construct levee work: Bayou Lafourche dam, Carroll levee, Poydras levee and Algiers to Venice; Frank M. Kerr, Chief, State Engrs. (See Machinery Wanted.)

La., New Orleans.—Wharf.—Lewis M. Dalgren, 315 Carondelet St., is lowest bidder at \$14,467.60 for repairs to wharf and floating drydock; H. R. Stanford, Ch. Bureau Yards and Docks, Navy Dept., Washington, D. C. (See Government and State Buildings under Buildings Proposed.)

La., New Orleans.—Levees.—Levee Commissioners Orleans Levee Dist., Leigh Carroll, Prest., 201 New Orleans Court Bldg., receives bids until July 28 to construct following levee work in Fifth Dist., Orleans parish: Parish line to Canal St. Ferry, enlargement, about 4600 lin. ft.; contents 80,000 cu. yds.; Canal St. Ferry to Algiers Sawmill, enlargement; reinforced concrete facing or paving 4500 sq. yds.; earthwork 7000 cu. yds.; Reka New Levee, about 10 mi. below Canal St. Ferry, right bank Mississippi

River; 4500 lin. ft. long; contents 110,000 cu. yds. (See Machinery Wanted.)

La., St. Francisville.—Levee and Reservoir. City let contract H. H. Shackelford Co., Bayou Sara, La., at \$3670 to construct reinforced concrete reservoir; no bids on levees; probably readvertise levee; reservoir inside measurement 50x40 ft.; require about 177 cu. yds. concrete and 35,000 lbs. reinforcing steel bars; about 4 ft. of reservoir under ground; 8-in. thick floor; walls 10 in. at base, 8 in. at top; roof 6 in. thick; 4 inside columns, supporting 2 girders; maximum high water level 10½ ft.; capacity about 151,000 gals.; V. E. Smith, Engr., Franklin, La. (Bids lately noted.)

Md., Easton.—Retaining Walls.—Talbot County Comms., J. B. Harrington, Clerk, will construct retaining wall along Miles River, distance 306 ft., at Easton approach to Miles River bridge; bids until July 28; blank proposal forms on application to State Roads Com., 601 Garrett Bldg., Baltimore, Md.; Frank W. Seth, County Roads Engr., Easton, Md. (See Machinery Wanted.)

Miss., Clarksdale.—Levee.—Yazoo-Mississippi Delta Levee Dist. will enlarge levee sections 22-28, inclusive, in Tunica county, containing about 558,000 cu. yds.; levee sections 35-36, Tunica county, containing 229,800 cu. yds.; levee sections 55-63, except section 60, in Tunica and Coahoma counties, containing about 814,000 cu. yds.; Levee Comms. receive bids until Aug. 3; T. G. Dabney, Ch. Engr. (See Machinery Wanted.)

Miss., Vicksburg.—Levee.—Mississippi Levee Com., Third Dist., let contract S. K. Jones of Mansford, La., to construct 7500 cu. yds. levee work near Henderson spur, East Carroll parish; J. R. Slattery, Major, Engrs. (Call for bids lately noted.)

N. C., Asheville.—Swimming Pool.—City let contract R. A. Poe, Charlotte, N. C., to construct lately-noted swimming pool, Aston Park; concrete; 30x100 ft.; 4 to 10 ft. deep; B. M. Lee, City Engr.

S. C., Charleston.—Coal Terminals.—Holston Corp. (Carolina, Clinchfield & Ohio Ry.), Ward Crosby, Ch. Engr., Johnson City, Tenn., let contract at about \$350,000 for constructing superstructure of pier to Arthur Bros. Co., 11 Pine St., New York; pier for coal terminals to represent total investment \$1,100,000; contracts so far let reported as exceeding \$500,000, exclusive of steel work; pier to be 850 ft. long; deck of concrete cap on concrete piles and anchored to base of concrete tunnel on wooden piles. (Other details heretofore reported.)

MISCELLANEOUS ENTERPRISES

Ala., Atmore.—Publishing.—Atmore Publishing Co., capital stock \$4000, inceptd. by Wm. O. Lester and others.

Ala., Birmingham.—Mineral Water.—Birmingham Mineral Waters Co., capital stock \$5000, inceptd.; W. S. Heaton, Prest.; John A. Norris, Secy.-Treas.

Ala., Birmingham.—Automobile Line.—Norwood Transportation Co. will be inceptd. by I. C. Beatty and others.

Ark., Argenta.—Laundry.—Aaron Frank, Propr. Frank's Laundry, contemplates erecting fireproof building and equipping as laundry.

Ark., Glenwood.—Publishing.—J. B. Norton, Pine Bluff, purchased 4000 printing plant and will publish Glenwood Progress.

Fla., Miami.—Incinerator.—City engaged John R. Bayless, Engr., Birmingham, to prepare plans and supervise installation of incinerator to cost \$20,000.

Fla., St. Augustine.—Laundry.—State Board of Control is having plans prepared for laundry and heating plant for State School for Deaf and Blind; building to be 2 stories; 80x40 ft.; brick; cost, exclusive of equipment, \$10,000; let contract in August.

Ga., Augusta.—Laundry.—Empire Laundry & Dry Cleaning Co. (H. Stark) will erect laundry; 2 stories; 50x300 ft.; fireproof; let contract for building and machinery.

Ga., Savannah.—Transportation.—Turpentine Transportation Co., capital \$10,000, incorporated by J. F. Driscoll and J. A. Myers.

Ky., Louisville.—Laundry.—Progress Laundry Co., capital \$30,000, inceptd. by Adolph A. Myers, Milton Myers and J. J. Myers.

Ky., Louisville.—Laundry.—Consolidated Realty Co. will erect brick laundry building at 1716 W. Broadway; cost \$6000.

Miss., Greenwood.—Construction.—Delta Construction Co., capital \$2500, inceptd. by C. P. Smith, J. H. Smith and others.

Mo., Kansas City.—Architecture.—Sanneman-Gould Architectural Co., capital stock \$2000, inceptd. by R. M. Sanneman, W. M. Gould and C. C. Talbot.

Mo., Kansas City.—Publishing.—Jewelry-Optometry Publishing Co., capital \$10,000, inceptd. by Wm. B. Needles, Maude J. Sands and L. E. Needles.

Mo., St. Louis.—Contracting.—Utah Rock Asphalt Co., capital stock \$10,000, inceptd. by M. W. Hambrough, M. C. Early and Oscar Grimm.

N. C., Durham.—Building Contracting.—Durham Construction Co., capital \$50,000, inceptd. by J. L. Morehead, J. K. Mason and T. C. Wordth.

Okla., Boynton.—Grain Elevator, etc.—Farmers' Gin & Grain Co. inceptd., capital stock \$10,000, by A. C. Trumbo, John H. Mosher and R. A. Patterson, all of Muskogee; deal in cotton and grain; purchased business of P. B. Wolfinger. (See Cotton Compresses and Gins.)

Okla., Muskogee.—Publishing.—Poultry Breeders' Publishing Co., capital \$10,000, inceptd. by John S. Benedict, Chas. J. Koepke and Selby J. Anderson.

S. C., Columbia.—Printing.—Lutheran Board of Publication, Rev. W. H. Greever, local manager, will build central printing plant in Eau Claire, suburb of Columbia.

Tenn., Nashville.—Publishing.—Waterways Publishing Co., capital stock \$50,000, inceptd. by Harry S. Stokes, J. W. Russwurm, Walter H. Colley and others to publish magazine—"American Waterways."

Tex., Houston.—Cleaning and Dyeing.—S. A. Thompson of The Pantatorium contemplates installing cleaning and dyeing plant.

Tex., Houston.—Electrical.—Barden Electric & Constructing Co., capital stock \$10,000, inceptd. by Ed. T. Barden, R. L. Jacobs and W. T. Boyd.

W. Va., Charleston.—Engineering.—Central Engineering Co., capital \$25,000, inceptd. by W. E. Moore, T. S. Clark, W. G. McCorkle and others.

W. Va., Wheeling.—Dairy.—Mayflower Dairy Co., capital \$10,000, inceptd. by Wm. H. Lorentz, Clyde Martin, Lems F. Nething and others.

MISCELLANEOUS FACTORIES

Ala., Birmingham.—Polish.—Peerless Polish Co., capital \$5000, inceptd.; N. O. Tyler, Prest.; R. T. Brewer, V.-P.; W. G. Tyler, Secy.-Treas.

D. C., Washington.—Bottling.—Oscar Vogt, Courtland Bldg., prepared plans for bottling works; 3 stories; 60x80 ft.; brick or reinforced concrete; slag roof; galvanized-iron cornice and structural iron.

Fla., Jacksonville.—Potato Chips.—Columbus Potato Chip Co., Columbus, O., is reported as contemplating establishing plant.

Fla., Miami.—Bottling.—Miami Bottling Works will enlarge plant; reorganize with \$25,000 capital stock and H. B. Graham, Prest.

Ga., Brunswick.—Bottling.—W. N. Gramling and others, Waycross, Ga., will build bottling plant; H. A. Tyres will be manager and direct machinery installation.

Ga., Cartersville.—Bottling.—Cartersville Chero-Cola Bottling Co. inceptd. by M. Gilentine and others.

Ky., Hopkinsville.—Creamery, etc.—Fox Bros. Co. will rebuild creamery, ice-cream factory and wholesale poultry plant reported burned at estimated loss of \$40,000.

Ky., Louisville.—Snuff.—Martin-Gorin Snuff Co., capital stock \$10,000, inceptd. by Aaron Martin, L. J. Gorin and J. B. Holloway.

Ky., Louisville.—Twin Mfg. Co., capital \$50,000, inceptd. by H. J. Graham, B. H. Wilson and Lucas Moore.

Ky., Louisville.—Tobacco.—Axton-Fisher Tobacco Co. will erect factory; 5 stories; concrete; cost \$25,000.

Ky., Louisville.—Cigars.—O'Dell Cigar Co., capital stock \$3300, inceptd. by Wm. E. Kremer, Floyd O'Dell and Walter E. Hufaker.

La., Alexandria.—Medicine.—Mitchell Medicine Co., capital \$200,000, inceptd.; T. A. Mitchell, Prest.; A. J. Allen, V.-P.; Sol B. Pressburg, Secy.-Treas.

La., New Orleans.—Candy.—Miller-Elmer Mfg. Co., Magazine and Lafayette Sts., will erect addition to candy factory; 21,000 sq. ft. additional floor space; present space 29,250 sq. ft.; merchandise chute to deliver finished products from factory to stockroom; install 50 revolving pans to mfr. dragees and sugar-coated candies for Central and South American trade; whole cost \$30,000.

Md., Elkton.—Paper.—Jesup & Moore Paper Co., capitalization \$3,000,000, inceptd. by G. Barker, P. E. Atkinson, I. V. Brock and others; owns Radnor Pulp Mills, Elk-

ton; Kenmore Paper Mills, Providence, Md.; Augustine Mills, Wilmington, Del.; Rockland Mills and Delaware Soda Fiber Pulp Mills, Christiana Hundred, Del., and Chester Mills, Coatesville, Pa.

Miss., Meridian.—Bakery.—B. F. Hyde, A. Niolon and W. Wigransky will erect 3-story brick building to cost \$20,000; Mr. Hyde to install baking equipment and occupy portion of ground floor.

Mo., Harrisonville.—Scales.—Eagle Scale & Mfg. Co. increased capital stock from \$5000 to \$25,000.

Mo., Kansas City.—Shomescope.—Shomescope Mfg. Co., capital \$25,000, inceptd. by W. E. Glessner, M. D. Good and E. J. Way.

Mo., St. Louis.—Cartons, etc.—Gereke-Allen Carton Co., capital stock \$12,000, inceptd. by E. G. Gereke, F. B. York, W. R. Allen, Jr., and others.

Mo., St. Louis.—Clothing.—St. Louis Apparel Co., capital stock \$9000, inceptd. by Sam M. Greenbaum, Margaret Garde and Ellen King.

Mo., St. Louis.—Ammann Mfg. Co., capital stock \$10,000, inceptd. by Theresa and Fred T. Ammann and Wm. Eichensteer.

Mo., St. Louis.—Clothing.—H. A. Schmidt Tailoring & Mfg. Co., capital stock \$20,000, inceptd. by H. A. Bertha and Henry A. Schmidt.

Mo., St. Louis.—Jo Sam Mfg. Co., capital stock \$2300, inceptd. by Sam W. Goldman, Jos. Hissstein and M. J. Lippe.

Mo., St. Louis.—Callophones.—Missouri Callophone Co., 1208 Fullerton Bldg., organized; C. C. Shafer, Prest.; R. A. Krause, Secy.-Treas.; to mfr. callophones; install 3 lathes, 3 drill presses and 2 milling machines; daily capacity 100 callophones; erect no building. (Lately noted inceptd., \$75,000 capital.)

N. C., Henderson.—Tobacco.—Imperial Tobacco Co., 111 Fifth Ave., New York, is reported to build tobacco factory; brick and concrete; 90x60 ft.

N. C., Mooresville.—Creamery.—Mooresville Co-operative Creamery, authorized capital \$50,000, inceptd.

N. C., Scotland Neck.—Peanuts.—American Spanish Peanut Co., N. B. Josey, Prest., let contract to Burwell Reddick, Suffolk, Va., to erect building for peanut factory; mill construction; cost \$15,000; no machinery bids asked. (Lately noted.)

N. C., Winston-Salem.—Tobacco.—Taylor Bros. Tobacco Co. contemplates erection of factory addition; brick; composition roof; cost within \$8000; plans being prepared.

N. C., Winston-Salem.—Tobacco.—R. J. Reynolds Tobacco Co. let contract Harwood & Moss, Newport News, Va., to erect sweat-house at Depot and 2d Sts.; 11 stories; 66x194 ft.; 104 ft. high; steel construction; concrete and brick curtain walls; windows, doors and stairways of steel; capacity 3,400,000 lbs. leaf tobacco; cost \$90,000 to \$100,000; plans by J. E. Shirrine, Greenville, S. C. (Lately noted.)

Okla., Shawnee.—Porch Goods.—Oklahoma Porch Goods Co., capital \$3500, inceptd. by J. Reeves, Sam W. Currie and Robert F. Sampson.

S. C., Greenville.—Shuttle Material, etc.—Norris Bros. (lately noted inceptd., capital \$70,000) organized; D. L. Norris, Prest., Treas. and Mgr.; A. M. Norris, V.-P.; Miss N. M. Stewart, Secy.; continue hardwood business of Norris Bros., Westminster, S. C.; supplying raw material to shuttle makers and manufacturers of textile mill supplies; remove main office to Greenville; no new buildings or machinery required.

Tenn., Chattanooga.—Drug Supplies.—National Mfg. Co., 114 W. 7th St. (lately noted inceptd., capital stock \$10,000), organized; E. P. Smith, Prest.-Mgr.; Chas. C. Moore, V.-P.; O. B. Wonschow, Secy.-Treas.; pharmaceuticals, drug supplies, toilet articles, etc.

Tenn., Columbia.—Bakery.—Red Seal Bakery, capital stock \$10,000, inceptd. by H. O. Fulton, R. L. Broome, B. E. Regan and others; purchased Red Seal Bakery.

Tex., Texarkana.—Paint.—Sedgewick Paint Co., capital stock \$10,000, inceptd. by H. E. Townsend, M. D. Tilson and P. B. Townsend.

Va., Bristol.—Chemicals.—Hart Chemical Corp., capital \$10,000, chartered; Chas. Ingram, V.-P., New York; Clement Cleveland, Jr., Secy., New York.

W. Va., Morgantown.—Composition Flooring, Roofing, etc.—Capital Flexstone Co., capital \$50,000, inceptd. by Frank K. Snapp of Morgantown, Edward F. Kelle, Karl F. Snyder, Geo. G. Gillette and A. C. Kelle of Columbus, O.

MOTORS AND GARAGES

D. C., Washington.—Garage.—R. P. Whitty Co., 412 Union Trust Bldg., has plans by Julius Wenig, 721 10th St. N. W., to erect 2-story brick garage at 1529 M St.; cost \$17,549.

La., New Orleans.—Garage.—David Pokorny purchased site at 828-832 Howard Ave. and will erect building leased by Lyons-Barton Motor Car Co. for sales, display and service rooms; structure to be of reinforced concrete; pressed brick front; 47½x130 ft.

Miss., Greenwood.—Automobiles.—Kim-brough Auto Co., capital stock \$50,000, incptd. by W. M. Kimbrough, E. M. Purcell and others.

Md., Baltimore.—Garage.—Stewart & Mowen Co., 215-217 Park Ave., will build brick garage at 108 W. North Ave.; architect and builder, H. H. Brown, 109-111 Clay St.

Tenn., Dyersburg.—Garage.—C. B. Crook let contract Brogan Construction Co. to erect brick garage.

Tex., Fort Worth.—Garage.—B. J. Tillar and I. H. Burney let contract Butcher & Sweeney, Fort Smith, to erect garage; 2 stories; tapestry brick; terra-cotta facing; cost \$15,000; leased to A. G. Ihseng Motor Car Co.

Tex., Houston.—Houston Lighting & Power Co., 1305, 1301 Capitol Ave., let contract to erect garage and storeroom. (See Warehouses.)

Va., Bristol.—Garage.—Moore & Hart will erect fireproof garage; 26x160 ft.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ky., Ludlow.—Cincinnati, New Orleans & Texas Pacific Ry., C. Dougherty, Ch. Engr., Cincinnati, O., purchased 28 tracts of land near Ludlow for about \$100,000; reported to build addition to shops and lay new tracks and sidings.

N. C., Raleigh.—Norfolk Southern Ry., E. C. Duncan, V.-P., will remove Biscoe shops to Raleigh; install the machinery at Glenwood yards, where extensive enlargements and repairs have been begun; to handle all of company's repairs except those in vicinity Norfolk and Newbern.

Tenn., Dyersburg.—Illinois Central R. R. Co., A. S. Baldwin, Ch. Engr., Chicago, contemplates construction of mechanical terminal and yard; cost about \$150,000.

Tex., Galveston.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Chief Engr., authorized in monthly budget expenditure of \$160,000 for improvements and acquisition of additional property; principal items to include \$50,025 for payment of east end park property; \$17,975 for addition to engine-house at Silabee; \$10,447 and \$11,549 for extension of two bridges on Southern division; \$2057.97 for brick drykila at Cleburne; \$7225.11 for raising grade for overhead crossing.

ROAD AND STREET WORK

Ala., Birmingham.—Board of Comms. let following paving contracts: Southern Bitulithic Co., Nashville, Tenn., to pave N. 25th St., 12th to 17th Ave., asphaltic concrete, cost \$15,449.50; Southern Asphalt & Construction Co., Birmingham, for asphalt paving under ordinance No. 831-C, cost \$25,530.50; Paul Richter, Birmingham, grading and macadamizing on Pike Ave. from Bryan St. to street railway, cost \$4000, includes 1500 cu. yds. excavation, 2200 lin. ft. curb and gutter, 1250 sq. yds. cement walk, 460 cu. yds. slag and 460 cu. yds. chert; also to Paul Richter for grading, curbing, gutters and sidewalks on 14th Ave. from 29th to 32d St., cost \$3800, includes 1200 cu. yds. excavation, 2200 lin. ft. curb and gutter, 1000 sq. yds. sidewalk, 150 sq. yds. alley paving, 350 lin. ft. 15-in. pipe; Julian Kendrick, City Engr. (Lately noted.)

Ala., Centerville.—Bibb county will grade, drain and surface with chert part of Centerville and Blocton Rd., beginning at end of present State-aid road; bids until Aug. 19; expenditure \$10,542.26; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Eutaw.—Greene county will grade, drain and surface with chert part of Eutaw and Clinton Rd., beginning at Eutaw; bids until Aug. 17; expenditure \$7000; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Hartselle.—City will construct 12,000 sq. yds. paving and ¼ mi. of curbing gutter. Address The Mayor.

Ala., Jasper.—Walker county voted \$250,000 bonds to construct roads; Chas. M. Sartain, Judge of Probate. (Lately noted.)

Ala., Marion.—Perry county will grade,

drain and surface with gravel part of Burrough's Ferry Rd., beginning at city limits of Marion; bids until Aug. 18; expenditure \$6542.26; W. S. Keller, State Highway Engr., Montgomery. (See Machinery Wanted.)

Ala., Opelika.—City let contract Jameson & Hallowell, Montgomery, to pave portions of Geneva St. and Ave. A with dolerite.

Ala., Tuskegee.—City votes Aug. 24 on \$15,000 bonds to improve streets; E. W. Thompson, Mayor.

Fla., Arcadia.—Dist. No. 4 of De Soto County will probably vote in October on \$350,000 bonds to construct roads and bridges. Address County Comms.

Fla., DeLand.—Volusia County Comms., C. W. Fisher, Chrmn., ask bids until Aug. 3 to construct about 6 mi. hard-surfaced shell road from near DeLand to DeLeon Springs; cost about \$15,000; A. B. Dunning, Engr., DeLand. (See Machinery Wanted.)

Fla., Fort Pierce.—St. Lucie county will hard-surface with marl road from Fellsmere 1½ mi. north; also hard-surface with marl about 4 mi. on Sebastian and Fellsmere Rd. as designated by County Engr.; bids until Aug. 4; J. E. Fultz, Clerk County Comms. (See Machinery Wanted.)

Fla., Kissimmee.—Osceola county will pave Orlando-Kissimmee Rd. to Orange county with brick. Address County Comms.

Fla., Marianna.—Jackson County Comms. to provide funds to pave around Courthouse square with concrete.

Fla., Miami.—City will pave certain streets, with necessary drainage for same; vitrified pipe and reinforced concrete sewers; bids about Aug. 6 on asphaltic concrete, vitrified brick, bitulithic, creosoted wood block and asphalt block; approximate yardage 95,000; plans and specifications ready about July 25; B. H. Klyce, Engr. (See Machinery Wanted.)

Fla., Panama City.—City will build 2000 ft. cement sidewalk and will grade 1 mi. of streets; bids until July 27; J. E. McKenzie, Town Clerk. (See Machinery Wanted.)

Fla., Tampa.—Hillsboro County Comms. will invite bids to pave Plant City Rd., River-view Rd., Thonotosassa Rd. and road between Ballast Point and Port Tampa City; Plant City Rd. is to be paved width of 15 ft. with vitrified brick and granite curbing.

Fla., Tampa.—City will pave Fortune St., Franklin St. to Hillsborough River; 4500 sq. yds.; bids opened July 21; D. B. McKay, Chrmn. Comms. of Public Works. (See Machinery Wanted.)

Fla., Tavares.—Lake County Comms. contemplate about 200 mi. roads; 9 ft., and some 15 ft. wide; engineer not yet selected; Comms. now inspecting some sand oil roads under construction; Board of Comms. includes A. L. Russell, Eustis, Fla., Chrmn., Dist. No. 4; J. M. McClendon, Leesburg, Dist. No. 1; G. W. Woods, Groveland, Dist. No. 2; J. H. Compton, Clermont, Dist. No. 3; A. J. Hinson, Altoona, Dist. No. 5; H. H. Duncan, Clerk. (\$500,000 bonds previously noted voted.)

Ky., Mayfield.—Graves County Fiscal Court let contract to gravel 50 mi. road; \$18,000 available.

Ky., Vanceburg.—Lewis county, Judge J. M. Lee, official in charge, will construct new and repair old roads; 150 mi. involved; date of opening bids not set; Ivon W. Sanders, Engr. (\$150,000 bonds lately noted voted.)

La., Baton Rouge.—City will pave portions of North Blvd., Florida, Bonnacoe, St. Ferdinand and Government Sts. Address The Mayor.

La., Gretna.—Jefferson Parish Police Jury reported to have authorized Julius F. and J. Dwight Funk to transfer contract to Bolger, Mosser and Williaman of Chicago to construct roads in Dists. 1 and 2; \$200,000 bond issue involved.

La., Hahnville.—Road Dist. No. 3, St. Charles parish, voted \$110,000 bonds to construct roads. Address Police Jury. (Lately noted.)

La., Hammond.—S. A. Gano is lowest bidder at \$52,042.35 to construct 13 mi. gravel road extending east and west through Hammond and Tangipahoa parish; W. E. Atkinson, State Highway Engr. (Lately noted.)

La., New Orleans.—City let contract Barber Asphalt Paving Co., Louisville, Ky., to pave Louisiana Ave. (Water to Saratoga St. and from Saratoga to S. Claiborne St.) and Coliseum St. (Louisiana to Aline St.); pitch lake asphalt surfacing; A. G. Ricks, Commr. (Call for bids lately noted.)

Md., Baltimore.—City let Contract No. 135 to Patrick Flanigan & Sons, 120 E. Lexington St., at \$2922; grade and pave 37th St., Charle-

St. to University Parkway. (Call for bids lately noted.)

Md., Baltimore.—City let contract M. J. Beach, 3315 Carlisle Ave., to pave third section Fallway, Madison to Eager St., with granite block. (Call for bids lately noted.)

Md., Baltimore.—Maryland State Roads Com., O. Weller, Chrmn., 601 Garrett Bldg., will build 10 sections of State highway; about 42.13 mi. in Allegany, Dorchester, Frederick, Prince George's, St. Mary's, Somerset and Washington counties and Baltimore city; bids until Aug. 4. (See Machinery Wanted.)

Md., Baltimore.—City let contract No. 91 Curry-Quinn Co., 3900 Garrison Ave., Baltimore, at \$15,028.75 to lay granite-block pavement on portions of Clay and Water Sts., Dark La. and Lovegrove Al.; 5500 sq. yds.; R. Keith Compton, Chrmn. Paving Com. (Call for bids lately noted.)

Md., Baltimore.—City let contract Union Paving Co., Schenectady, N. Y., at \$44,698 to pave with sheet asphalt Eutaw St. from Baltimore to Madison St.; Contract No. 92; sheet asphalt, 8810 sq. yds.; granite block repaving, 5685 sq. yds., etc. (Call for bids lately noted.)

Md., Cambridge.—Dorchester county sold \$21,000 of \$30,000 bonds for road improvement; Isaac O. Taylor, Prest. Board of Comms.

Md., Cumberland.—Allegany county will improve 5 mi. Legislative Rd.; Road Directors, J. T. Edwards, Prest., receive bids until Aug. 5. (See Machinery Wanted.)

Md., Cumberland.—City Council has arranged for expenditure of \$258,000 to pave streets; selected 30 streets on which bids will be invited at once; Leander Schaldt will supervise work. (Lately noted to have voted \$150,000 bonds.)

Md., Frederick.—City will pave 2d St. from Court St. to courthouse and W. 2d St. from Court St. to Market; E. C. Crum, City Engr.

Md., Frederick.—City will pave Court square, including Court and Record Sts. and one block W. 2d St., with amiesite; about 5000 sq. yds.; E. C. Crum, City Engr.

Miss., Grenada.—City asks bids until Aug. 3 for about 14,000 sq. yds. street paving with vitrified brick, wood block, concrete and bitulithic, 4000 lin. ft. concrete curb and necessary grading, water and sewer connections; L. B. James, City Recorder. (See Machinery Wanted.)

Miss., Hattiesburg.—Forrest County Supervisors are considering construction of road through Petal to new road connecting Petal and Harvey.

Miss., Hattiesburg.—Supvs. Dists. Nos. 1 and 3, Forrest county, will improve River Ave., Indian Springs and Corinth Rds.; about 5½ mi.; bids until Aug. 4; Herbert Gilhin, Chancery Clerk. (See Machinery Wanted.)

Miss., Laurel.—Board of Jones County Comms., Dist. No. 2, T. G. McCallum, Chrmn., will construct 14 mi. streets and roads; bids until Aug. 3; F. T. Myers, Engr. (See Machinery Wanted.)

Miss., Newton.—Newton County Highway Com., 4th Dist., let contract Healy Construction Co., Meridian, at \$40,389.65 to construct 22.11 mi. gravel roads; B. S. Snowden, Chief Engr. (Call for bids lately noted.)

Miss., Sison.—City will construct concrete sidewalks; bids until Aug. 4; Berry D. Brown and R. H. Swany, Street Comms. (See Machinery Wanted.)

Miss., Tupelo.—Lee County Supvs. let contracts to construct 49 mi. roads: Capital City Construction Co., Nashville, Tenn., at about \$55,000 for 11½ mi. concrete road from Sallito to Verona; Worthington Construction Co., Memphis, Tenn.; G. B. Hard & Co., Tuscaloosa, Ala., and Boyd & Bradshaw, Columbia, Miss., macadam roads aggregating 37½ mi.; A. C. Toner, Engr., 606 Dolphin St., Baltimore, prepared plans for concrete roads.

Mo., Clayton.—St. Louis county will construct 5600 ft. sample concrete automobile highway; width 16 ft.; require 3633 bbls. washed and screened gravel, 832 cu. yds. sand and 14,551 sacks Portland cement.

Mo., Independence.—Jackson County Commissioners let contract Davidson Bros. Construction Co., Kansas City, at \$9373 to grade and drain Owens Schoolhouse and Lake City Valley Rd.

Mo., Kansas City.—City let contract Fitzpatrick & Haas at \$2613.54 to grade 12th St., Summit St. to Broadway, and to W. C. Mullins at \$1356 to build retaining walls; also let contracts to grade intersecting streets.

Mo., Osceola.—St. Clair county votes in November on \$14,000 bonds to improve roads. Address County Comms.

Mo., St. Joseph.—City let following contracts to pave streets: Missouri Valley Construction Co., Lake Ave., Missouri Ave. to Cherokee St., asphalt; Young Bros., 26th St., Messie to Mary St., and Achison, 6th to 11th St., both with concrete; Dubois Concrete Co., sidewalks on Duncan St., 28th to 27th St., and paving between street railway company's rails in same block with vitrified brick; Standard Construction Co., sidewalks on south side Jones St., 22d St. to Frederick Ave.; Skilbred Construction Co., concrete curbing and sidewalks on 26th St., Mitchell to Doniphan Ave.

Mo., St. Louis.—Board of Public Improvements invite bids until Aug. 7 to improve Oakland Ave. from Clayton to Skinker Rd., estimated to cost \$30,050; also invites bids until same date to pave with wood block roadway on 12th St. viaduct from Spruce St. to Choutau Ave. and to pave sidewalks along its approaches; estimated cost \$27,400.

Mo., St. Louis.—Board of Public Improvements invites bids until July 31 for alley improvements costing \$57,708.

N. C., Durham.—City let contract L. S. Christian of Durham to grade Alston Ave. from Angier Ave. to Glenn St., and to Mr. Mendenhall of Charlotte for concrete curbing and guttering.

N. C., Monroe.—Commission let contract to Wright Johnston Contracting Co., Lincoln, N. C., for road and street work; H. B. Havely, Engr., Franklin, N. C.

N. C., Mooresville.—City, E. C. Denton, Clerk, will construct 9000 yds. bituminous paving, concrete base and curb; bids until Aug. 24; plans and specifications on application to Adlai Osborne, Engr., 414 Realty Bldg., Charlotte, N. C. (See Machinery Wanted.)

N. C., Newton.—City, G. A. Warlick, Mayor, let contract Noll Construction Co., Chattanooga, Tenn., B. W. Thompson, Box 507, Spartanburg, S. C., representative, for 5083 sq. yds. street paving. (Lately noted considering bond issue.)

N. C., Old Fort.—Old Fort township of McDowell county will improve Central Highway from Greenlee to Old Henry, 9½ mi.; work consists principally of grading and surfacing with gravel and constructing pipe and concrete culverts; 71,000 cu. yds. excavation and 12,000 cu. yds. gravel; P. H. Masburn, Chrmn. Old Fort Township Highway Com., receives bids until July 25. (See Machinery Wanted.)

N. C., Salisbury.—Rowan county, H. C. Trott, Chrmn. County Comms., is planning to construct complete road system; has \$40,000 to \$50,000 per year available for road building; use convict force; seeking road engineer. (See Machinery Wanted.)

N. C., Southport.—Smithville Township of Brunswick county voted \$10,000 additional bonds to construct roads. Address County Comms.

Okla., Vinita.—Craig county will build dirt road from Vinita to Ketcham, about 20 mi., and from Vinita in opposite direction about 15 mi.; D. T. Witt, County Road Supvr.

Tenn., Crossville.—Cumberland county votes Aug. 20 on \$75,000 bonds to construct roads. W. F. Bandy, Chrmn. County Comms.

Tenn., Dyersburg.—City, L. E. Carne, Mayor (lately noted to pave 9 streets), contemplates about 12,500 sq. yds. asphalt-concrete paving; final reading on this amount July 27; includes excavation, drainage, etc.; city has about 21,000 sq. yds. surveyed, and will probably let twice as much paving this year and next; R. C. Huston & Co., Engr., Memphis, Tenn.

Tenn., Kingston.—Roane county is reported to have voted \$270,000 pike bonds. Address County Comms.

Tenn., Nashville.—City will construct concrete curbing and sidewalks on 21st Ave., West End to Blakemore Ave.; bids until July 21; H. W. Howse, Mayor. (See Machinery Wanted.)

Tenn., Ripley.—City voted \$5000 bonds for street improvements and \$10,000 for sidewalks; A. I. Dorsey, Mayor. (Lately noted.)

Tex., Beaumont.—Jefferson County Comms. authorized construction of road 10,266 ft. long and 40 ft. wide in Comms. Precinct. No. 1.

Tex., Belton.—Comms. Road Dist. No. 7, Bell county, will open bids Aug. 3 to construct about 40 mi. 14 and 16-ft. gravel roads; 7 roads radiating from Holland and several cross-roads; \$105,000 available; See & Smith, Engrs., 211 Temple State Bank Bldg., Temple, Tex.; previously noted. (See Machinery Wanted.)

Tex., Cameron.—Road Dist. No. 2 of Milam county let contract Howard & Taylor, Belton, Tex., at \$71,605 to construct about 50 mi. road; contract includes all culverts up to 36

in., but does not include bridges or gravel to be used; estimated total cost \$125,000; Engr., J. C. Field Engineering Co., 105 Field Bldg., Denison. (Call for bids lately noted.)

Tex., Dallas.—City let contract for 90,000 sq. ft. cement sidewalks and 27,000 sq. ft. concrete gutter in Southern Methodist University addition; Engrs., Myers & Noyes.

Tex., Fort Stockton.—Pecos county will improve 250 mi. road.; bids until Aug. 13; Whiteaker & Washington, Engrs., Fort Stockton; Howell Johnson, County Judge. (See Machinery Wanted.)

Tex., Fort Worth.—Tarrant County Commissioners let contract G. B. Coke at \$2095.86 to improve Grapevine and Denton Rd.; approved specifications to grade 1 1/4 mi. Sublett-Webb Rd., and instructed County Auditor to invite bids until July 27.

Tex., Fort Worth.—City will pave with vertical fiber brick Jennings Ave. from 10th St. to Jennings Ave. viaduct; concrete gutters 12 inches wide; bids until July 28; F. J. VonZuben, City Engr.; M. P. Harwood, City Secy. (See Machinery Wanted.)

Tex., Kaufman.—City let contract R. S. Stubbs, Dallas, for 20,000 yds. vitrolithic paving; W. E. Pickard, Mayor. (Lately noted inviting bids to pave Courthouse Square, etc.)

Va., Fort Myer.—Richard E. Boisseau, 2700 Wisconsin Ave., Washington, D. C., has contract at \$4185 to construct road; 2300 lin. ft. water-bound macadam road 21 ft. wide.

Va., Highland Park, P. O. Richmond.—Town let contracts to Cosby & Maynard, Highland Park, and C. M. Henley, Richmond, to construct curb, gutter and sidewalks; amount available \$30,000; expend about \$30,000 at this time; Saville & Clairborne, Engrs., Richmond. (Lately noted as voting \$30,000 bonds.)

Va., Lebanon.—Russell county will macadamize 3 1/2 mi. roads already graded, from Castlewood toward Dante; bids received at Clerk's office until Aug. 4; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted.)

Va., Louisa.—Louisa county will construct 4 mi. soil road between Buckner's and Jackson; bids at Clerk's office until July 25; G. P. Coleman, State Highway Commr., Richmond. (See Machinery Wanted.)

Va., Lynchburg.—City appropriated \$15,000 to improve Concord Rd. and Franklin St. from Union to Grace St.; H. L. Shaner, City Engr.

Va., Pulaski.—City contemplates voting on \$75,000 bonds to improve streets. Address The Mayor.

Va., Staunton.—City will pave east side Central Ave., Churchill Ave. to Frederick St., with granite. Address The Mayor.

W. Va., New Cumberland.—Hancock county will grade and pave roads; bids until July 28; Armour S. Cooper, Clerk County Court. (See Machinery Wanted.)

W. Va., Piedmont.—City is considering bond issue to improve streets, etc. Address The Mayor.

W. Va., Princeton.—Mercer County Commissioners receive bids until July 30 for grading, masonry (except substructure of steel bridges) and macadam complete on following roads: Virginia-West Virginia State line near Pocahontas to Coopers, about 2 1/4 mi.; Bramwell to Rock, 8 mi.; Bramwell to Bluefield, 8 mi.; Princeton to Athens, 6 1/2 mi.; Carr Schoolhouse to Mouth of Sand Lick, 7 mi.; W. I. Lee, Ch. Engr. Macadam Road Construction, Princeton. (See Machinery Wanted.)

SEWER CONSTRUCTION

Ala., Anniston.—City will construct sewers; bids until July 23; W. O. Ward, City Clerk. (See Machinery Wanted.)

Ala., Birmingham.—Board of Commrs. let following sewer contracts: Dunn & Lallande Bros., Birmingham, to pave Ensley Ave. from Pike Ave. to 22d St., cost \$3090, includes 1600 yds. asphaltic concrete, 100 yds. brick paving, 1000 ft. border stone (granite), 100 lin. ft. cement curb and gutter; E. R. Maynard, Ensley, Ala., to construct sanitary sewers in Ensley, cost \$2948, includes 7000 lin. ft. 8-in. pipe, manholes, etc.; Julian Kendrick, City Engr. (Lately noted.)

Ala., Mobile.—Board of Revenue and Road Commrs. let contract E. S. Lynch at \$9009 to construct storm sewers and curbs on Spring Hill Ave. from city limits to Moffat Rd.

Ark., Little Rock.—Sewer Dist. No. 79 will construct 3200 lin. ft. 6-in. sanitary sewer; bids until July 27; Ford & MacCrea, Engrs.; W. C. McGinley, Chrmn. Commrs. (See Machinery Wanted.)

Ark., Siloam Springs.—City, J. H. Perry, Mayor, organized Improvement Dist. and contemplates \$50,000 bond issue to construct sewer system; Albert C. Moore, Engr., Bartlett Bldg., Joplin, Mo. (Plans lately noted in preliminary stage.)

Fla., Plant City.—Board of Public Works ordered extension of sewer on S. Collins St. 1200 ft. and on Montgomery St. 500 ft.

Ga., Lithonia.—City votes Aug. 15 on \$35,000 bonds for sewer system and water-works. A. J. McGahee, Mayor.

Ky., Oakdale, P. O. Louisville.—Sewer Commrs., P. D. Crawford, Chrmn., receives bids until July 24 to construct sewer in Oakdale; lately noted. (See Machinery Wanted.)

La., Shreveport.—City votes about Aug. 25 on \$1,200,000 bonds to purchase or acquire sewer system and water-works. Address The Mayor.

Md., Baltimore.—City will construct lateral sewers and house connections in Dist. No. 43-B; 57,000 lin. ft. vitrified pipe sewer, 8 to 18 in. diam.; 47,000 lin. ft. vitrified pipe house connections; bids until July 29; Ira Remsen, Chrmn. Sewerage Com. (See Machinery Wanted.)

Mo., Charleston.—City will construct sewer system and sewage treatment works; bids until Aug. 6; 6 mi. 8 to 12-in. pipe, 58 manholes, 32 flush tanks, Imhoff tank filter beds, sludge bed, sewage pumping equipment and force mains; Engr., Frank L. Wilcox, Syndicate Trust Bldg., St. Louis; D. W. Joslyn, Mayor. (See Machinery Wanted.)

Mo., Hannibal.—City will construct sewers in Sewer Dist. No. 300; 31,470 lin. ft. 6-in. sewer, 600 lin. ft. 12-in. sewer, 800 lin. ft. 6x6-ft. concrete sewer, 2039 lin. ft. 4x6-ft. concrete sewer, 700 lin. ft. 3x4-ft. concrete sewer, 24 manholes and 15 lampholes; bids until Aug. 3; R. F. Smiley, City Engr.; W. H. Youse, City Clerk. (See Machinery Wanted.)

Okla., Sapulpa.—City will construct 6-ft. storm sewers, cost \$60,000; date of opening bids not set; R. N. Whittlesey, Engr. in charge. (Bonds lately noted voted.)

S. C., Winnsboro.—City is considering \$90,000 bond issue for sewer system and water-works. Address The Mayor.

Tenn., Fayetteville.—City let contract Georgia Engineering & Construction Co., Clayton, Ga., at \$48,447 to construct sewer system; \$60,000 bonds voted; C. H. Jenks, Engr., Union City, Tenn.; Hiram Higgins, City Clerk. (Call for bids lately noted.)

Tenn., Shelbyville.—Shelbyville Sewerage & Drainage Co., capital \$3000, inctpd. by Jns. A. Woods, Robt. W. Clark, David G. Shephard and others; will construct sewer system three-quarters mi. long.

Tex., Dallas.—City let contract C. W. Olcott at \$17,213.20 to construct 12, 15 and 18-in. sewer outlet from Fair grounds to Ross Ave.; J. B. Winslett, City Secy. (Call for bids lately noted.)

Tex., Fort Bliss.—Government let contract Mayfield & Shaw, Fort Bliss, for sewer extension. (Bids lately noted.)

Tex., San Antonio.—City will let contracts in from 60 to 90 days for outfall and sanitary sewer construction amounting to \$300,000 or \$400,000; 2 contracts; since Jan. 1 contracts amounting to \$355,000 have been let; E. K. Ramsey, Asst. Sanitary Constr. Dept. (Phases of this work previously noted.)

W. Va., Martinsburg.—City will vote on bonds to construct sewer system; estimated cost \$235,000; David B. Stewart, Jr., Engr., Rome, N. Y., will make surveys.

TELEPHONE SYSTEMS

Ala., Birmingham.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) is reported as contemplating improvements to probably include exchange on South Highlands.

Fla., Key West.—Southern Bell Telephone & Telegraph Co. (main office, Atlanta, Ga.) will expend about \$10,000 to extend system; also enlarge exchange.

Miss., Isola.—Isola Telephone Co., capital \$1000, inctpd. by B. A. Wright, O. T. Eddie-man and others.

S. C., Turbeville.—Turbeville Telephone Co., capital stock \$1500, inctpd.; R. R. Thomson, Prest.; D. E. Turbeville, V.-P.; Geo. Green, Secy.-Treas.

Va., Natural Bridge.—Natural Bridge Mutual Telephone Co., capital \$5000, inctpd.; Kent Peery, Prest., Natural Bridge; P. G. Paxton, Secy.-Treas., Glasgow, Va.

TEXTILE MILLS

Ga., Griffin.—Cotton Cloth.—Rushton Cotton Mills will install 5000 spindles to replace worn-out spindles; has 15,000 spindles and

400 looms. (Lately noted to install additional spindles.)

Ga., Winder.—Cotton Products.—Barrow County Cotton Mills, capital stock \$125,000, inctpd. by L. S. Radford, J. M. Williams, R. S. Lanier and others; mfrs. cotton yarn, cloth, etc.

Md., Hagerstown.—Hosiery.—Antietam Knitting Co. will, as reported last week, rebuild hosiery mill burned at loss of \$75,000.

Miss., Moorhead.—Cotton Duck, etc.—Mississippi Cotton Mills Co., capital \$250,000, organized; purchased Bellevue Mills Co., with 5000 ring spindles, 48 broad looms, 96 narrow looms, etc.; Walter H. Carter, Prest., and Sheridan E. Cooper, Secy.-Treas., with offices at 208 Security Bldg., St. Louis, Mo.

N. C., Belmont.—Cotton Yarn.—National Yarn Mills proceeding with lately noted construction; has built cotton warehouse; commenced erection 1-story 340x128-ft. mill building; expects to install about 12,500 spindles; mfrs. fine combed yarns; machinery not purchased. (Lately noted organized, authorized capital stock \$250,000.)

N. C., Mayesworth.—Combed Yarns.—Mayes Mfg. Co. let contract to T. C. Thompson & Bros. of Charlotte, N. C., and Birmingham, Ala., to erect additional building; 3 stories, 130x75x12 ft., of brick construction, costing about \$30,000; will install 4000 spindles, additional motors for electric drive, etc.; has ordered machinery. (Lately noted.)

Okla., Sand Springs.—Cotton Cloth.—Inez Mfg. Co., care Commercial Club, Tulsa, plans to construct mill; report states will invest \$2,500,000 for structural steel buildings with plate-glass openings, equipment of machinery, 12-acre site, land developments for mill town, etc.

WATER-POWER DEVELOPMENTS

N. C., Boone.—Company not yet organized, but represented by B. B. Dougherty of Boone and Thos. Coffey, Blowing Rock, N. C., as managing officials, and with preliminary work, so far, under D. R. Shearer, Cons. Engr., Knoxville, Tenn., is planning system of three plants at estimated cost of \$350,000; plans on Yadkin River, at headwaters of New River, and near Three Forks on New River; the latter (previously described), now under construction, will supply light and power to Appalachian Training School and town of Boone; no contractor; contemplates system to consist of 30 miles transmission line; interurban railway proposed; cities to be connected include Boone, Blowing Rock and Lenoir, also smaller villages; about 1000 available horsepower; date of bids not set. (Lately noted.)

S. C., Georgetown.—Santee-Cooper River Development Co., formed by Geo. R. Fishburne and others, all of Charleston, S. C., proposes to construct canal from Santee River to Cooper River, ultimate purpose being to construct hydro-electric plant (at Cooper River end of canal) to develop 18,000 H. P. for electrical transmission to Georgetown, Orangeburg, Charleston, etc.; plans canal 23 mi. long with minimum depth 8 ft. and minimum width 150 ft.; canal site is about 50 mi. above tidewater on Santee River; now endeavoring to obtain Government permission to construct submerged dam to divert one-half of Santee River water into new channel.

WATER-WORKS

Ala., Birmingham.—City Com. ordered Julian Kendrick, City Engr., to report upon advisability of city constructing water-works; if report is favorable will call vote upon issuing \$5,000,000 bonds.

Ark., Paragould.—Board of Public Works invites bids until July 30 to extend water-works; 100,000-gal. steel tank; cost \$28,000; Rollins & Westover, Engrs., Kansas City, Mo.; H. O. Donaldson, City Secy. (Lately noted.)

Ark., Little Rock.—Arkansas Water Co. will extend water mains from 20th and May Sts. south on May St. to Asher Ave., Asher Ave. west from May, 857 ft., and on Strawberry Ave. south from Asher Ave., 1056 ft.

Ark., Rison.—Improvement Dist. retained Albert C. Moore, Bartlett Bldg., Joplin, Mo., to design and supervise construction of water-works and electric-lighting plant; cost about \$40,000.

Fla., Fellsmere.—Fellsmere Water Co. will construct water-works.

Fla., Plant City.—City engaged J. B. McCrary Co., Atlanta, to prepare map of water-works extension; will vote on \$20,000 bonds. (Lately noted.)

Ga., Bainbridge.—City, John W. Callahan, Mayor, will install water meters by Jan. 1;

bids received within next 30 days. (See Machinery Wanted.)

Ga., Chatsworth.—City is considering plans and estimates for water-works and electric-light plant prepared by J. B. McCrary Co., Atlanta; proposed to construct 50,000-gal. tank on 75-ft. tower, using 8 and 6-in. cast-iron pipe in business district and galvanized-iron pipe in residential section; 2 propositions being considered, one to bring water by gravity from hills, costing \$12,000, and other to pump water from Holly Creek, cost, steam-driven, \$11,000, and using oil engine, \$9500; lately noted to vote Aug. 5 on \$13,000 bonds.

Ga., Lithonia.—City votes Aug. 15 on \$35,000 bonds for water-works and sewer system. A. J. McGahee, Mayor.

Ga., Macon.—Water Commrs. will probably purchase and install 7,000,000-gal. pump for Riverside pumping station; H. D. Langworthy, Supt. Water-works Dept.

Ky., Hazel.—City contemplates constructing water-works. Address The Mayor.

La., Shreveport.—City votes about Aug. 25 on \$1,200,000 bonds to purchase or acquire water-works and sewer system. Address The Mayor.

Md., Frederick.—City contemplates voting \$100,000 bonds to improve and extend water-works, build reservoir, purchase land along watersheds of Tuscarora and Fishing creeks, etc. Address The Mayor.

Md., Rising Sun.—City votes Aug. 3 on bonds to construct water-works and electric-light plant. Address The Mayor.

Mo., Cassville.—City defeated bonds for water-works. (Lately noted.)

Mo., Charleston.—City rejected bids to construct water-works and invites new bids until Aug. 6; 6 mi. 4 to 8-in. cast-iron pipe, 60 hydrants, 43 valves with boxes and pumping station with oil-driven triplex pumps; Engr., Frank L. Wilcox, Syndicate Trust Bldg., St. Louis; D. W. Joslyn, Mayor; lately noted. (See Machinery Wanted.)

Mo., Monett.—City contemplates constructing water-works; cost \$10,000. Address The Mayor.

Mo., Neosho.—City voted \$60,000 bonds to extend water-works; 8 mi. cast-iron pipe; reinforced concrete reservoir, 600,000 gals. capacity; 50,000-gal. elevated tower and tank; motor-driven centrifugal pump, capacity 500 gals. per min.; Albert C. Moore, Engr., Bartlett Bldg., Joplin, Mo.

Okla., Blackwell.—City will not vote on bonds for water-works. (Lately reported.)

S. C., Winnsboro.—City is considering \$90,000 bond issue for water-works and sewer system. Address The Mayor.

Tenn., Manchester.—R. L. Wolfe is reported contemplating improving water-works.

Tex., Beaumont.—City will improve filters now in use by Beaumont water-works; bids until Aug. 4 to furnish and erect manifold systems, strainers and air-wash systems in six 500,000-gal. tub filters, gravity type; consulting engineers, Burns & McDonnell, 821-836 Scarritt Bldg., Kansas City, Mo.; J. G. Sutton, City Secy. (See Machinery, etc., Wanted.)

Tex., Big Spring.—City voted bonds for water-works. Address The Mayor.

Tex., Cotulla.—City votes Aug. 8 on \$14,000 bonds to drill artesian well and construct water-works. Address The Mayor.

Tex., Fort Bliss.—Government let contract Mayfield & Shaw, Fort Bliss, for water-works extension. (Bids lately noted.)

Tex., Naco.—Bisbee-Naco Water Co. will issue \$30,000 bonds to rebuild water-works.

Va., Marion.—City (lately noted to vote bonds in August) contemplates laying new water mains, using 10 or 12-in. wooden pipe; proposed expenditure \$15,000; W. E. Francis, Chrmn.

Tex., Wills Point.—City invites bids until July 27 on earthwork for water-works as follows: Earthen dam, 30,000 yds.; embankment, spillway of 4000 yds.; excavation; bids until July 27; Cooke & Harrison, Engrs., 1008 Southwestern Life Bldg., Dallas; A. B. Dawson, City Clerk. (See Machinery Wanted.)

W. Va., Kimball.—Kimball Light & Water Co. inctpd. by C. H. Boardman of Vivian, W. Va., and others. (See Electric Plants.)

W. Va., Piedmont.—City contemplates voting on bonds to acquire and improve water-works. Address The Mayor.

WOODWORKING PLANTS

Ark., Bald Knob.—Veneer.—Atwood Veneer Co., capital \$10,000, inctpd. by Cui Pearce, M. A. Atwood, F. W. Roetzel and others.

Ark., Blytheville.—Cooperage.—Blytheville Cooperage Co., F. P. Carter, Prest., will erect ordinary or mill-construction building

to cost about \$10,000; machinery supplied. (Lately noted increasing capital stock from \$15,000 to \$50,000.)

Ark., Kensett-Staves, etc.—Chess & Wyndom Co. of Arkansas, main office, Louisville, Ky., L. H. Wyndom, Prest., arranged for erection of lately-noted building of mill construction; install stave and heading machinery; daily capacity plant 30,000 pieces.

Ark., Sparkman—Staves.—Arkadelphia Milling Co., Arkadelphia, Ark., will build stave plant.

La., Hammond—Boxes, Crates, etc.—Hammond Box & Veneer Co., G. G. Bradshaw, Secy., will erect plant; 100x60 ft.; 3 stories.

Mo., St. Louis—Kitchen Cabinets.—Landau Cabinet Co. will erect addition to plant at 1545 Tower Grove Ave.; 3 stories and basement; 190x150 ft.; iron framework; walls mainly of glass; about 50 per cent. of roof of glass; cost about \$50,000; company to supervise construction.

Tenn., Memphis—Shingles.—Memphis Shingle Co. increased capital stock from \$2500 to \$30,000.

FIRE DAMAGE

Ala., Bessemer.—Building occupied by F. B. Buck and Sam Romano; loss \$7000 to \$8000.

Ala., Boyles.—Smith Bros. Feed & Grain Co.'s grain elevator and warehouse; estimated loss \$10,000; offices, 2413 1st Ave.

Ala., Greenville.—Geo. W. Searcy's sawmill and gin.

Ala., Jasper.—H. A. Seaman's residence; loss \$6000.

Ga., Augusta.—Edw. Beaman's residence; loss \$18,000.

Fla., Caryville.—P. H. Clemmons' saw and shingle mill and residence.

Ga., Rome.—Joseph Henderson's residence; loss \$4000.

Ky., Catlettsburg.—Ezra Wellman's building; Catlettsburg Fruit Co.'s warehouse.

Ky., Columbus.—Residences and outbuildings of Mrs. L. M. Larue, Joe Davis, J. F. Wright; loss \$7500.

Ky., Greensburg.—S. A. Anderson's residence.

Ky., Hopkinsville.—Fox Bros. Co.'s wholesale poultry, creamery and ice cream plant; estimated loss \$40,000.

Ky., Owensboro.—Famous Steam Laundry; loss \$7000.

Ky., Williamsburg.—Belmont Hotel; Congregational church (address The Pastor); J. E. Terry's store; loss \$25,000.

Md., Harrisonville, R. F. D. from Owings Mills.—Samuel Slade's residence; loss \$5000.

Miss., Okolona.—D. W. Reeder's residence. Miss., Picaune.—Rosa Lumber Co.'s sawmill and boiler-house; loss \$30,000.

Mo., Joplin.—Hendford Mining Co.'s concentrating plant; estimated loss \$20,000; R. C. Andrews, Gen. Mgr.

Mo., St. Joseph.—John Donovan's barn on King Hill Stock Farm.

Mo., St. Louis.—Standard Furniture Mfg. Co.'s plant at 2722-2730 S. 3d St.; estimated loss \$10,000.

N. C., Caroleen.—Harrill & Co.'s building; D. F. Benchboard's store.

Okla., Guthrie.—J. S. B. Hall's garage, loss \$2000; August Goos' blacksmith and machine shop; warehouse owned by Mrs. Wm. Barringer and occupied by W. D. Packer Implement Co., loss on building \$3000; building owned by W. H. Brunner and occupied by W. D. Packer Implement Co., loss on structure \$5000.

S. C., Lamar.—W. F. Wingham's residence.

Tenn., East Chattanooga.—Southern Ry. Co.'s depot; loss \$10,000 to \$15,000; B. Herman, Ch. Engr., 1300 Pennsylvania Ave. N. W., Washington, D. C.

Tenn., Harriman.—Harriman Flouring Mill Co.'s warehouse and barn; loss \$4000.

Tenn., Leoma.—W. T. Burch's store and residence; loss \$5000.

Tenn., Springfield.—Will Owens' residence; loss \$5000.

Tex., Amherst.—G. C. Clem's gin.

Tex., Beeville.—National Hotel, W. L. Nations, Prop.

Tex., El Campo.—Dr. W. E. Chandler's residence; loss \$5000.

Tex., Farmersville.—L. C. Bumpass' garage and machine shop; loss \$3000.

Tex., Goliad.—C. H. Baker & Son's drug store; Leggett & Co.'s store; H. B. Henley's building; total loss, \$16,000.

Tex., Hillsboro.—Glen Daniel's residence; loss \$3000.

Va., Bon Air.—Robert Kyrk's residence and barn at Monte Bello near Bon Air; loss about \$15,000.

Va., Seaford.—Rowe Bros. & Sons Co. (main office, Hampton) fertilizer plant at Poquoson River; loss \$20,000 to \$25,000.

W. Va., Charleston.—Masonic Temple; loss \$10,000.

W. Va., Princeton.—Chas. Snider's planing mill; loss \$3000.

DAMAGED BY STORM, ETC.

Ky., Henderson.—Municipal electric-light plant. Address The Mayor.

Mo., Bevier.—U. D. Wright's residence and barn; loss \$5000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—B. F. Meyers, Bond Bldg., will soon receive bids to erect 3-story-and-basement apartment on Massachusetts Ave.

D. C., Washington.—Alfred Higbie & Co. has plans by N. R. Grimm, Bond Bldg., Washington, for store and flat. (See Stores.)

D. C., Washington.—J. H. deSibour, Hibbs Bldg., Washington, it is reported, prepared preliminary plans for apartment-house at 18th and Massachusetts Ave. N. W.; 6 stories; fireproof; cost \$250,000; owner's name withheld.

D. C., Washington.—H. M. Etchison, 729 15th St. N. W., has plans by A. E. Landvoigt, 1338 G St. N. W., to erect apartment at 2206 I St. N. W.; cost \$6500; construction by owner.

Fla., Bradentown.—Bradentown Furniture Co. has plans for building for apartments, etc. (See Stores.)

Fla., Bradentown.—I. O. O. F. will erect building for apartments, etc. (See Association and Fraternal.)

Fla., Mt. Dora.—J. P. Donnelly will erect store and apartment building. (See Stores.)

Fla., St. Augustine.—W. J. Sanchez will erect apartment and store building. (See Stores.)

Ga., Atlanta.—Dr. W. E. Lambert will erect apartment-house; cost \$30,000; A. N. Canton, Archt., Candler Bldg., Atlanta.

Ga., Atlanta.—Misses Mattie and Mittie Smith are having plans prepared by Henrietta C. Dozier, Hurt Bldg., Atlanta, for apartment-house; 2 suites; frame; cost \$5000.

Ga., Savannah.—Mrs. Hardy C. Cunningham has plans by Geo. T. Steinacker, Savannah, for apartment-house; 3 stories; 7 rooms, pantry and bathrooms on each floor; buff-face brick; marble sills and lintels; reinforced concrete piazza floors; tiled bathroom floors; cost \$12,500.

Mo., Kansas City.—J. M. Saunders will erect apartment-house at 1221-23 The Paseo; 23 suites; cost \$25,000.

Mo., St. Louis.—H. A. Scholknicht will erect two 2-story tenement-houses at 2309 Harris St. and 4249 Holly St.; cost \$3000.

Mo., St. Louis.—John C. Greulich Realty Co. will erect 5 and 6-room flat on Farlin Ave.; hot-water heat; plans in progress.

Mo., St. Louis.—Agnes Mueller will erect two 2-story tenements at 3303-07-09 Humphrey St.; cost \$14,000.

Mo., St. Louis.—H. F. Tacke will erect two 2-story tenement-houses at 3421-23 S. Spring St. and 3801-03 Fairview St.; cost \$10,000.

Mo., St. Louis.—G. Anderson will erect 2-story tenement at 3618 Rebecca St.; cost \$4000; construction by owner.

Mo., St. Louis.—Geo. Freebersyler will erect 2-story tenement-house at 5401-03 Florissant St.; cost \$9000.

Mo., St. Louis.—Sedgely Investment Co. will erect two 2-story tenements on Kingsbury Pl.; cost \$19,000.

Tenn., Chattanooga.—Geo. W. Wallace is reported to have acquired site at Orchard Knob to erect number of tenement-houses at cost of \$10,000.

Tenn., Nashville.—F. W. McDaniel will erect brick apartments at 18th Ave. and Acklen St.; cost \$17,000.

Tex., El Paso.—J. S. Fennell is having plans prepared for apartment-house on West Boulevard; 10 suites; cost \$12,000.

Tex., El Paso.—Mrs. Guy Warren is having plans prepared by O. H. Thorman, El Paso, to remodel LeRoy Apartments on W. Missouri St.; cost \$7000.

W. Va., Charleston.—Charleston National Bank is erecting additional rooms to building. (Lately noted.)

W. Va., Charleston.—Mrs. A. Bolarsky, 1510 Virginia St., will expend \$50,000 to erect

Fla., Bradentown.—I. O. O. F. has plans by T. W. Hullinger & Son, Bradentown, for building; pressed brick; 3 stories; 50x92 ft.; lower floor for 2 stores; second floor, 13 rooms for apartments; upper floor, lodge-rooms.

La., Monroe.—Y. M. H. A. receives bids through Sam Kaplan until Aug. 6 to erect temple; Stevens & Nelson, Archts., New Orleans.

Tex., Austin.—Elks Building Assn., C. A. Bahn, Secy., receives bids until Aug. 4 to erect building; 46x128 ft.; 3½ stories; ordinary construction; gravel roof; gravity heat; elevator; cost about \$50,000; plans and specifications at office of C. H. Page & Bro., Archts., Austin, Tex. (Lately noted.)

Tex., Malvern.—E. O. Kilpatrick, Secy. of Building Com., A. F. and A. M., will receive bids until July 31 to erect 2-story brick addition to Masonic Temple; plans and specifications at office of Mr. Kilpatrick.

Va., Portsmouth.—Aerie No. 558, Fraternal Order of Eagles, will erect building.

W. Va., Charleston.—Masonic Temple Committee has plans by Packard & Sansbury, Columbus, O., for temple; bids accepted in three forms for construction of first double floor (1) Tennessee marble; (2) Indiana limestone; (3) terra-cotta with stone trimmings; remaining 2 stories brick, with stone trimmings; 74 ft. high; architects are receiving bids; plans and specifications at office of committee at Citizens' Building Bldg., 5th St., Charleston, and office of architects, Columbus.

BANK AND OFFICE

Fla., Bradentown.—Bradentown Furniture Co. has plans for building for offices, etc. (See Stores.)

Fla., Tampa.—Chas. H. Brown, Prest. of Gulf Coast Line R. R., will remodel building for offices, etc. (See Theaters.)

Miss., Greenville.—Chas. Hafter has plans for store and office building. (See Stores.)

Tex., Dallas.—Dallas Club and Dallas Chamber of Commerce are reported to have tentative plans for 10-story building at Foyd and Commerce Sts., to cost \$250,000. (Dallas Chamber of Commerce lately noted having abandoned plan to erect building.)

Tex., Fort Worth.—Fort Worth Club opens bids Aug. 1 through Muller & Pollard, Archts., 717 Fort Worth National Bank Bldg., Fort Worth, to erect office, store and club building; 50x100 ft.; 10 stories; cost (without mechanical equipment) \$300,000; fireproof; promenade tile or gravel roof; heating and plumbing to cost \$20,000; elevator \$16,000. (Lately noted.)

Tex., San Antonio.—Mrs. Johanne Steves has plans by Leo M. J. Dielmann, San Antonio, for office and store building. (See Stores.)

Tex., Wichita Falls.—First National Bank opens bids Aug. 1 to erect bank and office building; 50x150 ft.; 5 stories and basement; cost (without mechanical equipment) \$130,000; fireproof; gravel roof; steam heat; lighting to cost \$4000; Otis elevator to cost \$16,000; Sanguinet & Staats, Archts., Fort Worth.

Va., Norfolk.—Seaboard National Bank has plans by Neff & Thompson, Norfolk, for enlarging and improving building; will remove partitions, remodel front, install new fixtures, etc.; bids opened; Bankers' Building Bureau, New York, is lowest bidder at \$12,900.

W. Va., Bluefield.—Flat Top National Bank has plans by Hoggson Bros., New York, for bank building at Higginbotham Ave. and Raleigh St.; 1 story; pressed brick; granite base; marble front; construction under supervision of W. N. Boyd, Bluefield.

W. Va., Charleston.—Charleston National Bank is erecting additional rooms to building. (Lately noted.)

W. Va., Charleston.—Mrs. A. Bolarsky, 1510 Virginia St., will expend \$50,000 to erect

office and store building; bids opened July 15. (See Stores.)

CHURCHES

Ala., Bessemer.—Beulah Baptist Church, Rev. Mr. Thornton, pastor, opens bids Aug. 15 to erect building; 45x50 ft.; cement block; metal roofing; cost \$10,000; hot-air heat, \$400; electric lighting; W. A. Rayfield & Co., Archts., Box 649, Birmingham.

Ala., Gadsden.—First Presbyterian Church, Rev. R. Excell Fry, pastor, will erect building; brick; 47x90 ft.; ordinary construction; slate roof; gas-steam radiators; electric lighting; cost \$10,000; A. D. Simpson, Archt., Gadsden; lets contract about Aug. 15. Address Archt.

Ala., Selma.—Broad Street Presbyterian Church has plans by Chas. H. Hopson, 1302 Henley Bldg., Atlanta, for addition to building; brick; slate roof; steam heat; cost \$5000.

D. C., Washington.—St. Andrew's P. E. Church, Rev. J. J. Dimon, rector, 14th and Corcoran Sts. N. W., will erect building on 16th St.

Fla., Mulberry.—W. P. Reed, Secy. of Bldg. Co., receives bids until Aug. 5 to erect brick church; plans and specifications at office of Bank of Mulberry.

Ga., Atlanta.—West End Presbyterian Church is having plans prepared by Harry Edmund Lindley, 517 Peters Bldg., and Hentz & Reid, Candler Bldg., Atlanta, Asso. Archts., to remodel building; remove front and tower and extend; Gothic architecture; extend rear for Sunday-school; install organ, vapor heating plant and pews; cost \$8000 (exclusive of heating, finishing hardware, lighting fixtures, seating and organ).

Ga., Cochran.—Baptist Church will erect \$25,000 building. Address The Pastor.

Ga., Hartwell.—Baptist Church is reported to erect addition to building. Address The Pastor.

Ky., Middlesboro.—First Baptist Church is reported receiving bids to erect building. Address The Pastor.

Ky., Middlesboro.—First Baptist Church postponed date of opening bids to erect building from July 15 to probably Aug. 1; 90x106 ft.; ordinary construction; metal, tile and Carey's roof; vapor system of heating; cost \$25,000; R. F. Graf & Sons, Archts., Knoxville, Tenn. (Lately noted.)

Md., Baltimore.—Bethel Reformed Lutheran Church has plans by Price & Price, Atlantic Highlands, N. J., for building at Baltimore St. and Ellwood Ave. and will probably let contract to J. H. Kelly, 1208 E. Biddle St., Baltimore, to erect; 45x47 ft.; 1 story; brick; cost about \$10,000.

Miss., Clarksdale.—First Methodist Church, Rev. W. S. LaGrone, pastor, is having plans prepared by John Gaisford, Memphis, Tenn., for building; cost \$40,000; Gerald Fitzgerald, Chrmn. of Bldg. Com.

Miss., Okolona.—First Presbyterian Church, J. F. Eddins, Chrmn. of Bldg. Com., is having plans prepared by John Gaisford, Memphis, Tenn., for building; brick; classic style; cost \$11,000.

N. C., Charlotte.—Knox Presbyterian Church will erect church and Sunday-school building at Travis Ave. and 5th St.; brick; concrete foundation; cost \$15,000.

Okla., Henryetta.—Christian Science Church soon opens bids to erect building; 46x70 ft.; semi-fireproof; tile roof; steam heat; electric lighting; cost \$20,000; W. A. Rayfield & Co., Archts., Box 649, Birmingham. (Christian Church lately noted to erect building.)

Okla., Oklahoma City.—Pilgrim Congregational Church, Rev. W. H. Burch, pastor, will enlarge and remodel building at Noble and Harvey Sts.; remove east side and extend walls 20 ft., providing total floor space of 10,000 sq. ft.; 14 additional classrooms, etc.

S. C., Columbia.—Reform Baptist Church organized by C. H. Calclasure, J. T. Baker, B. L. Todd and others; will erect building.

Tenn., Memphis.—Union Avenue Baptist Church has plans by John Gaisford, Memphis, for Sunday-school addition; concrete blocks; 56x70 ft.; will contain chapel and classrooms; cost \$7000.

Tex., Amarillo.—Polk St. Methodist Church will erect building for children. Address The Pastor.

Tex., Galveston.—West Tabernacle Church will erect 3000 frame addition. Address The Pastor.

Tex., Mart.—Mart Baptist Church will enlarge building; erect 30-ft. addition in rear, providing 10 additional rooms; increase main auditorium, arrange for choir loft, pipe organ, etc.; cost \$10,000. Address The Pastor.

Tex., Palestine.—Bethel M. E. Church, Rev. H. S. Shum, pastor, has plans by W. A. Rayfield & Co., Box 649, Birmingham, Ala., for building; 50x90 ft.; cost \$800; heating, \$350; metal roofing; electric lighting.

CITY AND COUNTY

Ala., Marion Junction.—Hall.—School Board has plans for town hall and school building. (See Schools.)

D. C., Washington.—Shelters.—Dist. Commissioners, 509 District Bldg., will expend \$12,000 to erect market shelters; 40x550 ft.; steel columns; corrugated roof; gas water heaters; Snowden Ashford, Municipal Archt., District Bldg. (Lately noted receiving bids until July 22.)

Fla., Bartow.—Library.—City has plans by Bonfoey & Elliott, Tampa, for \$10,000 Carnegie library.

Fla., Jacksonville.—Detention House.—Duval County Commrs. postponed erecting juvenile detention home pending special tax decision; Mark & Sheftall, Archts., 210 Clark Bldg., Jacksonville. (Lately noted to open bids July 1.)

Fla., Lakeland.—Hospital.—City is considering bond issue for public improvements, including erection of hospital to cost \$15,000. Address The Mayor.

Fla., Tarpon Springs.—City Hall.—City will issue \$30,000 bonds to erect city hall. Address Mayor Webster.

Ga., West Point.—Auditorium.—City voted \$10,000 bonds to erect auditorium. Address The Mayor. (Lately noted.)

Ky., Louisville.—Police Station.—Board of Public Safety, Edw. J. Tierney, Chrmn., is considering erection of police station in West End to replace Fourth Dist. Station; also plans to erect engine-house for the Highlands.

Mo., Alton.—City Hall.—City is reported considering election on \$160,000 bonds to erect city hall. Address The Mayor.

N. C., Asheboro.—Jail.—Candolph County Commrs. have plans by Sayre & Baldwin, Citizens' National Bank Bldg., Raleigh, N. C., for jail; day labor; bids received later on heating and wiring; plans at offices of Archts. and H. M. Robbins, County Atty. (Lately noted.)

N. C., Greenville.—Home.—Pitt County Commrs. rejected all bids to erect home and will advertise for new bids; plans by Benton & Moore, Wilson, N. C., call for structure 55x300 ft.; clay tile roof; low-pressure steam heat; electric lights; cost not to exceed \$25,000. (Lately noted.)

Okla., Blackwell.—Pavilion.—City will not erect pavilion; bond election (lately noted) was erroneous. Address The Mayor.

S. C., Spartanburg.—City Hall.—City is having plans prepared by W. A. Edwards, Candler Bldg., Atlanta, Ga., for city hall and jail. (Lately noted.)

Tex., Boston.—Jail.—Bowie county is having plans prepared by E. C. Seibert, Texarkana, Tex., for jail.

Tex., Fort Worth.—Home.—Tarrant County Commrs. let contract July 27 to erect orphan's home; 45x78 ft.; 3 stories; fireproof; gravel and tile roof; cost \$25,000; Muller & Pollard, Archts., Fort Worth National Bank Bldg., Fort Worth; lately noted. (See Machinery Wanted.)

Tex., Houston Heights.—City Hall.—City, Earl Wilson, Mayor pro tem., receives bids through A. C. Pigg, Archt., 317 Union National Bank Bldg., Houston, Tex., until July 27 to erect city hall and fire station; fireproof; cost about \$16,000; plans and specifications at office of architect as above.

COURTHOUSES

Fla., Fort Myers.—Lee County Commrs. receive bids through H. A. Hendry, Clerk, until July 23 to erect courthouse; plans and specifications at office of Mr. Hendry at Fort Myers and Francis J. Kennard, Archt., 409 American National Bank Bldg., Tampa. (Lately noted.)

Fla., Miami.—Bids received by Dade County Commrs. until July 23 to erect addition to courthouse; fireproof construction for vaults and some rooms; to conform with present structure; cost \$12,000 to \$15,000. (Lately noted.)

Ga., Alamo.—Wheeler County Commrs. receive bids until Aug. 25 to erect \$30,000 courthouse; plans and specifications at office of J. F. Sikes, Chrmn., Alamo, and E. C. Hosford & Co., Archts., Eastman, Ga. (Lately noted.)

N. C., Whitesville.—Columbus County Commrs. C. C. Pridgen, Chrmn., will expend \$45,000 to erect courthouse; 80x115 ft.;

ordinary construction; Barrett specification or slate roof; low-pressure steam heat; J. F. Leitner, Archt., Wilmington. (Lately noted to receive bids until Aug. 11.)

Tex., San Antonio.—Bexar County Commrs. will expend \$65,000 to erect addition to courthouse; 38x124 ft.; fireproof; Barrett's specification roof; repair heating plant; Leo M. J. Dielmann and C. W. Boelhaue, Asso. Archts., San Antonio; bids opened July 21. (Lately noted.)

DWELLINGS

Ala., Birmingham.—Acme Building & Realty Co. will erect three 1-story frame dwellings on 11th and 12th Aves.; cost \$550.

Ala., Birmingham.—C. D. Ellison, 59th St. and 3d Ave., lets contract July 27 to erect residence; 34x52 ft.; ordinary construction; hot-air heat; electric lighting; cost \$300; roofing contract will be let to A. H. White & Co., New Orleans; W. A. Rayfield & Co., Archts., Box 649, Birmingham, to whom proposals may be addressed.

Ala., Ensley.—W. A. Watts, 214 Brown-Marx Bldg., will erect several dwellings on Ave. C near 26th St.; 28x35 ft.; frame construction; composition roof; grates; cost \$350; plans and construction by owner. (Lately noted.)

Ark., Helena.—Dr. M. Fink will erect 2 dwellings on College St.

Ark., Helena.—E. Newman will erect 3 dwellings on McDonough St.

Ark., Helena.—E. A. Porter will erect 2 dwellings on Walker St.

Ark., Helena.—H. Barnett will erect 3 dwellings on Pecan St.

Ark., Helena.—I. Rothschild will erect 5 dwellings on Perry St.

Ark., Helena.—J. B. Lyle will erect 2 dwellings on Franklin and Holly Sts.

Ark., Helena.—E. A. Lyle will erect 3 residences on Franklin and Holly Sts.

Ark., Little Rock.—G. W. Fair will erect 2-story brick-veneer dwelling at 1706 Broadway.

D. C., Washington.—A. A. Fisher has plans by Appleton P. Clark, Jr., 816 14th St. N. W., Washington, for residence on Wyoming Ave.; 3 stories; 40x50 ft.; limestone trimmings; galvanized iron cornice; slag roof.

D. C., Washington.—Anna Lukel has plans by G. T. Santmyer, 412 District National Bank Bldg., Washington, for dwelling at 1015 13th St. N. W.; frame; cost \$3500.

D. C., Washington.—A. Burnstine has plans by A. S. J. Atkinson, 3801 McComb St. N. W., Washington, for store and residence at 489 Pennsylvania Ave. N. W.; 4 stories; cost \$3000.

D. C., Washington.—D. J. Partillo, 4208 8th St. N. W., has plans by A. W. Brown, 1725 H St. N. W., Washington, to erect residence at 1421 7th St. N. W.; cost \$3500; construction by owner.

D. C., Washington.—Eugene Edwards has plans by A. E. Landvoigt, 1338 G St. N. W., Washington, for residence on 16th St.; 2 stories; 30x36 ft.; hollow tile and stucco; cost \$6000.

D. C., Washington.—John R. Haislip, 2120 1st St. N. W., has plans by Edw. O. Volland, 1348 Kearney St. N. W., Washington, for three 2-story brick dwellings at 412-23-25 8th St. N. W.; cost \$9000.

D. C., Washington.—J. W. Powell, 628 6th St. N. E., has plans by W. J. Palmer, 527 9th St. N. W., Washington, to erect dwelling at 533 Harvard St. N. W.; cost \$3000; construction by owner.

D. C., Washington.—Kennedy Bros., 1334 H St. N. W., has plans by A. H. Sonneman, 1334 H St. N. W., Washington, for seven 2-story brick dwellings to cost \$28,000 at 615-27 Quebec St. N. W.

D. C., Washington.—Middaugh & Shannon, Inc., Colorado Bldg., will erect 9 dwellings at 513-29 Shepherd St. N. W.; cost \$34,000.

D. C., Washington.—M. Diebitsch, 3605 Adams Mill Rd. N. W., is erecting 3 dwellings at 2012-16 12th St. N. W.; cost \$7000.

D. C., Washington.—Simon Oppenheimer, 322 Southern Bldg., will erect 5 dwellings at 3018-26 Park Rd. N. W.; cost \$15,000.

D. C., Washington.—St. Thomas' P. E. Church has plans by Clarke Waggaman, 1124 Connecticut Ave., Washington, for rectory on New Hampshire Ave. near 21st St.; brick; stone; 3 stories and basement; colonial style; cost \$35,000.

D. C., Washington.—Wm. Gearing will erect residence at Coleman Park; 2 stories; stone; cost \$6000; N. R. Grimm, Archt., Bond Bldg., Washington.

Fla., Gainesville.—Dr. J. C. Bishop has plans by Warren & Goin, Baird Bldg., Gaines-

ville, for five 6-room frame bungalows; cost \$10,000.

Fla., Key West.—W. E. Huston has plans by T. M. Bryan, Key West, for frame residence; bids received until July 19.

Fla., Safety Harbor.—E. A. Boyd is reported to erect 6 or 7 cottages.

Fla., St. Petersburg.—Mrs. Mae Purnell acquired A. C. Wright property on 1st Ave. near 2d St.; will erect 23 additional rooms and occupy as boarding-house.

Ga., Hawkinsville.—H. F. Lawson has plans by Nisbet & Brown, Grand Bldg., Macon, Ga., for \$3000 frame cottage; electric fixtures.

Ga., Savannah.—D. M. Bradley, Hagan, Ga., will erect \$5000 residence.

Ga., Savannah.—S. B. Volpian will erect 2-story residence; 8 rooms.

Ga., Savannah.—H. H. Kuck has plans by Geo. T. Steinacker, 601 E. 38th St., Savannah, for dwelling; 28x46 ft.; 2 stories; frame with shingle sides; ordinary construction; Bangor slate roof; hot-water heat to cost \$450; gas and electric lighting.

Ga., Tifton.—H. H. Tift, Jr., has plans by A. Barill, Jr., 522 Grant Bldg., Atlanta, for residence; 2 stories; 8 rooms; sleeping porch; brick veneer; green shingle tile roof; rift pine floors; electric fixtures; brick veneer garage; total cost \$3000; owner is receiving bids for construction.

Ky., Louisville.—C. J. Baer will erect frame dwelling at 2409 W. Broadway; cost \$3000.

Ky., Louisville.—Adam Atxinger will erect 3 frame dwellings; cost \$4500.

La., New Orleans.—A. J. Guldry will erect 2-story residence; cost \$4500.

La., New Orleans.—Henry L. Hoehn will erect 3 double 2-story residences; cost \$5000.

Md., Baltimore.—Edw. J. Gallagher Realty Co., 919 Munsey Bldg., will erect 140 dwellings on Homestead, Madison and Polk Sts.

Md., Baltimore.—J. S. Stein of Stein Bros., 217 E. Baltimore St., has plans by Edw. L. Palmer, Jr., 408 Roland Ave., Roland Park, Md., for residence at Windsor Hills; brick and stone; concrete foundation; slate roof; steam heat; electric lights; contractors estimating; Raymond E. Chambers, 36th St. and Roland Ave.; E. G. Turner, Bateman Ave.; G. Walter Tovell, Eutaw and McCulloh St.; all of Baltimore.

Md., Baltimore.—Lohmuller Bldg Co. will expend \$21,000 to erect 18 dwellings on Abbotston St.; 14x44 ft.; ordinary construction; Carey's roof; hot-air heat; gas and electric lighting; G. Bernard Lohmuller, Archt., 1735 N. Broadway, Baltimore. (Lately noted.)

Md., Baltimore.—Enos S. Stockbridge, Calvert Bldg., will erect residence at Ten Hills; 2½ stories; frame and brick; 35x71 ft.; contractors estimating are J. Henry Smith, 1426 Light St.; G. Walter Tovell, Eutaw and Dolphin Sts.; C. C. Watts, 113 W. Hamilton St.; Walter E. Burnham, Law Bldg.; all of Baltimore; Smith & May, Archts.

Md., Baltimore.—Webb & White, 717 Title Bldg., will erect four 8 to 12-room cottages at Hill Top Park and five 6 to 8-room dwellings at Alisa terraces; cost \$35,000; heating plant, \$3000; mill construction; O. B. Wight, Archt., Munsey Bldg., Baltimore; construction by owners.

Md., Baltimore.—Roland Park Co., Munsey Bldg., Baltimore and Roland Park, Md., has plans by Edw. L. Palmer, Jr., 408 Roland Ave., Roland Park, Md., for 10 dwellings on Norwood Rd.; 2 stories; stucco on brick.

Md., Chevy Chase.—A. B. Mullet, Union Trust Bldg., prepared plans for 2-story dwelling to cost about \$7000.

Md., Havre de Grace.—J. P. Richardson is having plans prepared by Walter M. Gleske, Gunther Bldg., Baltimore, for residence reported to cost \$40,000, and outbuildings on road leading from Havre de Grace to Belair, Md.; English style; stone, stucco and half timber construction; 14 rooms and 3 baths; red tile roof; hardwood interior finish; private electric-light plant, sewage-disposal plant and water supply system; garage.

Miss., Wesson.—Mrs. Robt. Douglass will rebuild residence; cost about \$5000. (Lately reported burned.)

Mo., Fayette.—John A. Wood will erect residence.

Mo., St. Louis.—A. Wenzlick will erect 2 two-story dwellings at 3624-29 Wenzlick St.; cost \$4000.

Mo., St. Louis.—W. K. Stanard has plans by Fredk. C. Bonasack, St. Louis, for residence in Brentmoor; 2 stories, attic and basement; colonial style; matt brick; Bedford stone trimmings; garage in rear.

Mo., St. Louis.—C. W. Wehking, Jr., will

erect 2-story dwelling at 612 Kingshighway; cost \$6000.

Mo., St. Louis.—J. B. Wise will erect 5 one-story dwellings at 2945-53 January St.; cost \$9000.

Mo., St. Louis.—L. Zimmerman will erect 2-story dwelling at 4055 Magnolia St.; cost \$4000.

Mo., St. Louis.—J. B. Wilson, care of Globe Sprinkling Co., has plans by J. M. Dunham Co., 1018 Chemical Bldg., St. Louis, for residence; ordinary construction; slate roof; hot-water heat (contract not let); electric lighting; contracts will be sublet. (Above company lately noted having contract.)

Mo., University City, Sta. St. Louis.—Eugene Devine, 5703 Baetmer Ave., St. Louis, is having plans prepared for residence; 40x40 ft. (Lately noted to cost \$15,000.)

N. C., Charlotte.—Jones & Sherrill will erect four 6-room residences on Louisa Ave.; cost \$12,000.

N. C., Charlotte.—F. F. Jones will erect \$3000 residence; 1 story.

N. C., Charlotte.—H. C. Sherrill will erect 1-story dwelling on Lamar Ave.; cost \$3500.

N. C., Charlotte.—J. M. W. Marshall will erect residence; 5 rooms; frame; cost \$5000.

N. C., Charlotte.—T. M. Constable will erect residence; 8 rooms; 50x80 ft.; cost \$5500.

N. C., Charlotte.—Ernest Ellison and C. W. Requarth will erect 2 residences in Myers Park; 7 rooms; cost \$7000.

N. C., Charlotte.—Bissell Mill Belting Co. will erect tenant houses to cost \$3500.

N. C., Hickory.—W. W. Burns has plans by Q. E. Herman, Hickory, for residence; cost \$4500.

N. C., Raleigh.—Teal & Huffman will erect 2 frame residences on Franklin St.; cost \$5000.

N. C., Winston-Salem.—C. G. Huff will erect dwelling; 1 story; frame; cost \$3000 to \$4000.

N. C., Winston-Salem.—Thos. Stultz will erect dwelling; frame; cost \$3000.

S. C., Charleston.—H. N. Nelson will erect dwelling at 5 New St.; cost \$3000.

S. C., Greenville.—J. C. Milford opens bids about Aug. 10 to erect dwelling; brick veneer construction; tile or slate roof; vapor steam heat; cost \$10,000; H. Olin James, Archt., Greenville, to whom proposals may be addressed. (Lately noted.)

Tenn., Knoxville.—S. G. Helskell will erect residence on Healy St.

Tenn., Memphis.—E. C. Cook will erect residence at 1780 Vinton Ave.; cost \$3250.

Tenn., Memphis.—Dr. Neuman Taylor will erect residence at 923 S. Cooper St.; cost \$4450.

Tenn., Memphis.—A. S. and Stella Picard will erect residence at 1688 Galloway Ave.; cost \$2250.

Tenn., Memphis.—R. G. Carr will erect residence at 411 Malvern Pl.; cost \$3250.

Tenn., Memphis.—Saul Simon will erect residence at 256 Stonewall Pl.; cost \$4500.

Tenn., Nashville.—D. D. Wright will erect brick dwelling at 21st Ave. and Patterson St.; cost \$4000.

Tenn., Nashville.—F. C. Glenn will erect brick-veneer dwelling at 1210 17th Ave.; cost \$5500.

Tenn., Nashville.—J. H. and B. A. Entoe will erect 2 frame dwellings; cost \$3900.

Tenn., Nashville.—Home Building & Mfg. Co. will erect 2 brick-veneer dwellings on 25th St. near Capers; cost \$7974; Geo. I. Wadley & Co., Agts., Nashville.

Tex., Dallas.—J. A. Traylor will erect two 5-room frame cottages at 4906-23 Garland St.; cost \$3000.

Tex., Dallas.—M. A. Waddell will erect 8-room residence; cost \$5000.

Tex., Dallas.—E. L. Graham will erect 2-story 8-room residence at 4624 Live Oak St.; cost \$4500.

Tex., Dallas.—J. J. McCart will erect \$15,000 residence.

Tex., Dallas.—J. W. Chatfield will erect 2-story frame cottage at 403 E. 12th St.; cost \$3500.

Tex., Dallas.—Mrs. B. K. Day will erect 2-story 5-room residence at 1824 Richardson St.; cost \$4500.

Tex., Dallas.—L. A. Coulter will erect 2-story 8-room frame residence at 3836 Lemon St.; cost \$4500.

Tex., Dallas.—W. B. Skinner will erect 5-room frame cottage at 3834 Gilbert St.; cost \$3900.

Tex., El Paso.—A. Schwarz is having plans prepared by Trost & Trost, El Paso,

for residence on N. Mesa Ave.; red pressed brick; 11 rooms; red tile roof; brick garage; cost \$20,000.

Tex., El Paso.—E. A. Walters is having plans prepared by Perry-Kirkpatrick Co., El Paso, for \$3000 bungalow on Verde Ave.

Tex., Galveston.—Galveston Building Association will erect 4 frame cottages; cost \$3000.

Tex., Lockhart.—R. Warshawski will erect brick-veneer cottage.

Tex., Galveston.—Miss Lena Love will erect 2-story frame dwelling; cost \$6500.

Tex., Houston.—J. R. Braffett will erect 6-room residence; cost \$3300.

Tex., Houston.—B. F. Greenwood will erect 5-room residence; cost \$3000.

Tex., Houston.—Andrew Ness will erect dwelling for Jno. B. Warren; 9 rooms; stucco; shingle roof; cost \$9000; hot-air heat to cost \$750; construction by owner. (Mr. Warren lately noted to erect residence.)

Tex., El Paso.—Geo. LeBaron is having plans prepared by O. H. Thorman, El Paso, for residence at Noble & Montana Sts.; cost \$6000.

Tex., El Paso.—Horace Broadus is having plans prepared to remodel residence. (See Stores.)

Tex., El Paso.—H. E. Kilburn is having plans prepared by O. H. Thorman, El Paso, for 3 bungalows in Tobin Fourth addition; cost \$5500.

Tex., El Paso.—Perry-Kirkpatrick Co. will erect 5 bungalows in Manhattan Heights; cost \$20,000.

Tex., Galveston.—M. C. Bowden will erect 2 frame cottages at 15th St. and Ave. N½; cost \$3000.

Tex., Galveston.—Mrs. J. Hauratto will erect 2 frame cottages and 2-story frame dwelling; cost \$3600.

Va., Richmond.—O. J. Davis will erect 2-story brick dwelling on Main St. between Allison and Granby Sts.; cost \$3500.

Va., Richmond.—W. W. Gresham, 1202 Mutual Bldg., is having plans prepared by E. T. Gresham for residence; hot-water heat; cost \$4000.

Va., Richmond.—W. T. and Helen B. Petteway will erect 2-story brick dwelling at 2225 Grove Ave.; cost \$7461.

Va., Richmond.—Mathias Kayhoe will erect 4 detached brick dwellings on Stuart Ave.; cost \$20,000.

W. Va., Charleston.—D. A. Brawley is having plans prepared by David Dick, Charleston, for residence on Pennsylvania Ave.; 2 stories; brick; cost \$7000.

W. Va., Charleston.—Mrs. Enoch Carver is having plans prepared by David Dick, Charleston, for residence; 2 stories; brick; cost \$7000.

W. Va., Folsom.—Howard Claypool will erect frame dwelling on Neville St.

W. Va., Huntington.—H. C. Duncan will erect brick addition to dwelling at 527 9th St.; cost \$3000.

W. Va., Huntington.—J. W. Valentine will erect brick bungalow on Park Hill; cost \$4000.

GOVERNMENT AND STATE

Ark., Arkadelphia.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., is having plans prepared by Frank M. Blaisdell, Little Rock, for post-office building, for which Congress appropriated \$55,000.

D. C., Washington.—Memorial.—Executive Office, Com. on Memorial to Women of Civil War, 1729 New York Ave., Washington, D. C. Bids until Aug. 20 to erect memorial; Wm. W. Harts, Col. U. S. A., executive officer; information on application.

D. C., Washington.—Auditor's Building.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., opened bids to repair auditor's building, including suspended ceilings, floors, etc.; Skinker & Garrett, 414-15 Evans Bldg., Washington, are lowest bidders at \$8997.

Ga., Savannah.—Memorial.—H. W. Witcover, Savannah, completed plans to remodel Confederate Memorial building; 6 columns at front, etc.; structure 2 stories and basement.

La., New Orleans.—H. R. Stanford, Ch. of Bureau of Yards and Docks, Navy Dept., Washington, D. C., opened bids to repair wharf at New Orleans naval station and improve buildings at yards; Lewis M. Daigran, 315 Carondelet St., New Orleans, is lowest bidder for wharf at \$14,467.60; F. W. Bixler, 408 Perrin St., New Orleans, is lowest bidder for buildings at \$34,835. (Previously noted.)

Md., Belair.—Armory.—Armory Com. selected site on Main St. as location for \$30,000

armory, for which Jno. B. Hamm, York, Pa., is architect. (Lately noted.)

Miss., Tupelo.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supervising Archt., Washington, D. C., opened bids to erect complete (including mechanical equipment, lighting fixtures and approaches) postoffice; 1 story, mezzanine and basement; 4000 sq. ft. ground area; brick faced; fireproof; first floor and ceiling; composition roof; drawings and specifications at this office and on application to custodian at site at discretion of Supervising Archt.

Tenn., Shelbyville.—Postoffice.—Treasury Dept., Oscar Wenderoth, Supvr. Archt., Washington, D. C., rejected all bids to erect postoffice. (Lately noted.)

Va., Covington.—Postoffice.—Treasury Department, Oscar Wenderoth, Supvr. Archt., Washington, D. C., opened bids to erect postoffice; Olin Gerlach, Frostburg, Md., is lowest bidder at \$38,980 for limestone and \$39,800 for sandstone construction; 2 stories and basement; 3800 sq. ft. ground area; 1st floor fireproof; stone and brick facing; tin roof. (Lately noted.)

HOTELS

Ala., Hurtsboro.—B. Goldstein will enlarge and remodel hotel operated by Mrs. S. A. Richards; will equip 18 rooms with baths and lavatories; other details not determined; Okel & Cooper, Archts., Vandiver Bldg., Montgomery.

D. C., Washington.—Gus Buchholz, Propr. Occidental Hotel, has plans by A. B. Mullett & Co., Union Trust Bldg., Washington, to remodel building adjoining hotel; cost \$12,000; terra-cotta and brick; slag roof; galvanized iron skylight; terra-cotta cornice and structural and ornamental iron.

D. C., Washington.—Carl O. Sparrwardt, 1703 New York Ave. N. W., has plans by Ward Brown, 1725 H St., and H. A. Peaslee, 808 17th St. N. W., Washington, for hotel adjoining Knickerbocker Hotel; 9 stories and roof garden; cream-colored brick trimmed with Indiana limestone; red Spanish tile roof; gymnasium; shower baths on each floor; open-air restaurant on terrace enclosed with stone balustrade; financed by Grant Wing of Bar Harbor, Me., and Paris. Mr. Brown wires Manufacturers Record: "Hotel will be fireproof; 40x100 ft.; about 180 rooms; cost about \$300,000."

Ga., Dublin.—T. W. Hooks is reported to erect 20 additional rooms to New Dublin Hotel and to remodel adjoining building.

La., New Orleans.—A. H. Ehrensing, New Orleans, prepared plans to remodel hotel on Canal St., to be known as New Hotel Ranson, Sage Rose, Prop.; cost \$25,000; 150 rooms, 100 with baths; fittings and furnishing to cost \$25,000 additional. (Previously noted.)

Md., Cumberland.—Warren C. White, Henry J. Glick and others are reported to soon let contract to erect hotel at Washington and Water Sts.; 6 stories; fireproof; 120 bedrooms, 50 baths and roof garden; cold-storage plant; 96x100 ft.; cost \$300,000; C. M. Anderson, Archt., 324 N. Charles St., Baltimore. (Mr. White and others previously noted to have abandoned plan to erect hotel.)

Tenn., Dyersburg.—Hotel Virginia has plans by H. T. McGee, Memphis, to remodel hotel; will provide 30 additional rooms with bath, enlarge lobby, provide tile floor, steam heat, etc.

Tex., San Angelo.—J. D. Sugg is reported having plans prepared for hotel.

W. Va., Wheeling.—McClure Hotel has plans by Edw. Franzheim, Wheeling, for improvements to hotel; will remodel interior, replace entrance steps with marble, marble floor, remove partition, provide ladies' restroom, etc.

MISCELLANEOUS

Ala., Albertville.—Stable.—Riggs Bros. & Co. will erect stable.

Ark., Little Rock.—Cafe.—Joe Stathakis, Propr. Faust Cafe, 104 W. Markham St., has plans by Frank W. Gibb, Little Rock, for improvements to building; will expend \$2500 for front of terra-cotta with marble base; construct balcony; extend dining-room 15 ft.; install marble fixtures, kitchen equipment, etc.; total cost \$10,000.

D. C., Washington.—Clubhouse.—College Woman's Club, Mrs. John R. Weyrich, Cor. Secy., 1400 M St. N. W., plans to erect clubhouse.

D. C., Washington.—Clubhouse.—Washington Club, 1710 I St. N. W., will remodel building at 1701 K St. N. W. for clubhouse; cost \$6000.

D. C., Washington.—Stable.—M. F. Nash,

122 M St. N. W., will expend \$7000 (cost without mechanical equipment) to erect stable; 25x110 ft.; mill construction; slag roof; steam heat to cost \$600; gas lighting; freight elevator to cost \$800; Thos. M. Medford, Archt., 1631 3d St. N. W., Washington; construction by owner. (Lately noted.)

D. C., Washington.—Clubhouse.—T. W. Sidwell, 804 21st St. N. W., will expend \$5000 to remodel clubhouse at 3901 Wisconsin Ave. N. W.

Ga., Donaldsonville.—Fair.—Southwestern Georgia Fair Assn., P. S. Cummings, Pres., is having plans prepared by P. E. Dennis, American National Bank Bldg., Macon, Ga., for annex to poultry building; 1 story; frame; 50x130 ft.

Md., Baltimore.—Orphanage.—Hebrew Orphanage has plans by B. Frank, 323 N. Charles St., Baltimore, for 2-story addition at Rayner and Dukeland Aves.; contractors estimating are: Blake & Engle, Law Bldg.; John Hiltz & Son, 3 Clay St.; M. C. Davis, 15 E. Fayette St.; Fidelity Construction Co., Knickerbocker Bldg.; all of Baltimore.

Md., Towson.—Sanatorium.—Eudowood Sanatorium will erect barn on farm near Towson; 2 and 3 stories; frame and hollow tile; steam heat; electric lights.

N. C., Middlesex.—Sheds.—Middlesex Supply Co. contemplates rebuilding guano sheds. (Lately reported burned.)

N. C., Raleigh.—Hospital.—Frank K. Thomsen, Archt., Raleigh, states contract for nurses' home for Rex Hospital will not be let before Aug. 1; 46x102 ft.; ordinary construction; cost \$30,000. (Lately noted.)

Okla., Chickasha.—Hospital.—Drs. Livermore and Downey open bids about July 27 to erect hospital; 40x105 ft.; mill construction; gravel roof; hot-water heat; electric lighting; T. J. Galbraith, Archt., Chickasha. (Lately noted.)

S. C., Columbia.—Hospital.—Baptist Hospital Assn. acquired site on Hampton St. between Pickens and Henderson Sts. for hospital.

Tex., Fort Worth.—Club, etc.—Fort Worth Club opens bids Aug. 1 through Muller & Pollard, Archts., 717 Fort Worth National Bank Bldg., Fort Worth, to erect club, store and office building; lately noted. (See Bank and Office.)

Tex., Houston.—Shed and Platform.—S. Samuels & Co. will erect open shed and drying platform; cost \$3000.

W. Va., Huntington.—Clubhouse.—Ohio Valley Electric Ry. Co., W. W. Magoon, Gen. Mgr., will erect clubhouse for Employees' Welfare Assn.; cost \$3500.

RAILWAY STATIONS, SHEDS, ETC.

Ala., Phenix City.—Central of Georgia R. R., C. K. Lawrence, Ch. Engr., Savannah, Ga., is reported to erect depot.

Ga., Atlanta.—Georgia Ry., Light & Power Co. will erect freight depot; 100x200 ft.; cost \$7000.

Ga., Gainesville.—Gainesville Midland Ry., W. R. Beaulieu, Gen. Mgr., Gainesville, Ga., will erect terminal depot 24x92 ft.; 2 stories; brick; cost \$9000; also erect freight depot 24x150 ft.

Tenn., Chattanooga.—Alabama Great Southern R. R., C. Dougherty, Ch. Engr., Cincinnati, is reported to erect freight station and warehouse at Market and Union Sts., to cost about \$250,000. Mr. Dougherty wires Manufacturers Record: "Have no definite information."

Tenn., East Chattanooga.—Southern Ry. Co., B. Herman, Ch. Engr., 1300 Pennsylvania Ave. N. W., Washington, D. C., will probably rebuild depot reported burned at loss of \$10,000 to \$15,000.

W. Va., Fairmont.—Pittsburgh & Lake Erie R. R., J. A. Atwood, Ch. Engr., Pittsburgh, Pa., will erect passenger station at Water and Madison Sts.

W. Va., Parkersburg.—Baltimore & Ohio R. R. Co., F. L. Stuart, Ch. Engr., Baltimore and Charles Sts., Baltimore, Md., plans to improve freight terminal.

SCHOOLS

Ala., Clanton.—Bids received by E. B. Deacon, Judge of Probate, until July 15 to erect brick school; Frank Lockwood, Archt., Montgomery.

Ala., Opp.—Opp School Dist. has plans by Warren & Goin, Baird Bldg., Gainesville, Fla., for school; 8 rooms and auditorium; brick; galvanized-iron shingle and tin roof; electric lights; steam heat; double floors; cement cornice; tiling in loggia; cost \$13,000; bids will be received through Thos. Conners, Chrmn. Board of Education.

Ark., Conway.—Central College, John W.

Conger, Prest., will erect 3-story annex to main building; provide accommodations for 50 additional students; contract let July 22.

Ark., Marion.—Marion Special School Dist. Trustees adopted plans by John Gaisford, Memphis, Tenn., for school; concrete and brick; cost \$6000.

Fla., Bronson.—Special Tax School Dist. of Levy county voted \$15,000 bonds to erect school; Thos. W. Price, Supt. Board of Public Instruction.

Fla., Leesburg.—School Board, Wm. T. Kennedy, Secy., Unatilla, Fla., receives bids until Aug. 24 to erect 1-story and basement brick and frame auditorium. (See Fla., Tavares.)

Fla., Miami.—Dade County Board of Public Instruction receives bids until Aug. 4 to erect public school on 20th St. at or near site of present school, and one at 20th St. extension on site of Drakes Mill; plans and specifications at offices of August Geiger, Archt., 216 Townley Bldg., Miami.

Fla., Tavares.—School Board, Wm. T. Kennedy, Secy., Unatilla, Fla., receives bids until Aug. 24 to erect 2-story and basement brick and frame school building; also one-story and basement brick and frame auditorium at Leesburg, Fla.; separate estimates on each building; plans and specifications at office of W. H. Carr, Leesburg.

Fla., Wimauma.—Wimauma Special School Tax Dist. has plans by W. B. Biggers, Tampa, for school for which bonds were voted; 2 stories; brick; 5 classrooms, auditorium, etc.; red brick facing; buff brick trimmings; tar and gravel roof. (Lately noted.)

Fla., Winterhaven.—Winterhaven School Dist. will vote on \$40,000 bonds to erect school. Address Dist. School Trustees. (Previously noted to have selected plans for \$30,000 school to contain 12 rooms and auditorium to seat 600.)

Ga., Atlanta.—Methodist Episcopal Church South, Bishop Warren A. Candler, Chrmn. of Com., will establish university; erect and equip buildings at estimated ultimate cost of \$5,000,000; Bishop Candler wires Manufacturers Record: "Details not yet settled."

Ga., Cordele.—City will erect school; cost \$10,000; brick; architect not employed; work in charge of Bond Com., O. S. Bazemore, Prest. (Lately noted.)

Ga., Fulton County.—Georgia Training School for Girls receives bids Aug. 19 to erect model cottage; ordinary construction; reinforced concrete basement; brick veneer first floor, stucco and half timber second floor; slate or asbestos tile roof; cost \$20,000; drawings and specifications ready July 21; A. Ten Eyck Brown, Archt., Atlanta.

Ga., Marion Junction.—School Board has plans by Chas. H. Hopson, Atlanta, for school and town hall; 56x58 ft.; metal shingle roof; furnace; cost \$4500; day labor.

Ga., Milledgeville.—G. M. C. College is repairing barracks, plans include remodeling dining-room, enlarging kitchen, installing lights, cement floors, repainting interior of armory, etc.

Ga., Pearson.—F. M. McNeal, Jeff Kirkland, J. O. White and others are committee to select site, secure plans and supervise construction of school.

Ky., Lexington.—Chandler Normal School, F. J. Working, principal, will probably erect 2 dormitories and manual training building; cost \$100,000.

Ky., Louisville.—Board of Education will expend \$4393 to repair school at 16th and Kentucky Sts.; \$5380 to repair school at Clay and Market Sts.; \$3550 to erect addition at 410 Western Parkway; \$9857 to erect addition at Floyd and Chestnut Sts.; \$4900 for repairs at 13th and Green Sts.; \$3560 to erect addition at 5th and Hill Sts.; \$3400 for repairs at 2d and Hill Sts.; \$23,460 for repairs and additions to various other schools.

La., Baskin.—Baskin School Dist. votes Aug. 15 on \$16,000 bonds to erect school. Address Franklin Parish School Board, Winnabro, La.

La., Crowville.—Crowville School Dist. votes Aug. 15 on \$16,000 bonds to erect school. Address Franklin Parish School Board, Winnabro, La.

Md., Baltimore.—Johns Hopkins Medical School is having plans prepared by Archer & Allen, Central Savings Bank Bldg., Baltimore, to enlarge laboratory building at cost of about \$50,000; details not available.

Md., Baltimore.—City has plans by Smith & May, 800 Law Bldg., Baltimore, for No. 50 school at Gorsuch and Kennedy Aves.; 3 stories.

Md., Hyattsville.—Hunter & Bell, Southern Bldg., Washington, D. C., prepared plans for 2-story brick school to cost \$10,000.

Mo., Columbia.—University of Missouri receives bids until July 24 to erect laboratory for hog serum plant.

Md., Ocean City.—Maryland State Teachers' Assn. rejected all bids to erect school; 3 stories; brick; concrete foundation; slate roof; steam heat; electric lights; cost \$25,000; Theo. Wells Pietsch, Archt., American Bldg., Baltimore, Md. (Lately noted.)

Md., Wolfville.—School Board has plans by B. Evar Kepner, Frederick, Md., for school; 4 rooms; brick and stone; 1 story; will let contract latter part of July. (Lately noted.)

Miss., Ashland.—Benton County School Board will erect central high school to cost \$8000; bonds issued.

Miss., Borde.—Board of Aldermen adopted proposition to issue bonds for school.

Miss., Gallman.—Gallman School Dist. Trustees are considering issuing \$5000 bonds to erect school.

Miss., Purvis.—Trustees of Yawn Consolidated School Dist. issued \$3000 bonds to erect and equip school.

Mo., Cameron.—Board of Education, W. G. Sloan, Pres., will expend \$50,000 to erect graded and high school; 80x100 ft.; semi-fireproof; composition roof; vacuum steam heat; Rose & Peterson, Archts., Kansas City, Mo. (Lately noted.)

Mo., Kansas City.—Directors of School Dist. of Kansas City, Jas. B. Jackson, Jr., Secy., receive bids until July 27 to furnish material and erect addition to Emerson School at Tracy Ave. and Pacific St.; plans and specifications at office of Chas. A. Smith, Archt., 602 Finance Bldg., Kansas City.

Mo., Normandy.—Barnett, Haynes & Barnett, Century Bldg., St. Louis, prepared plans for seminary building; 4 stories; 25x100 ft.

Mo., Webster Groves.—Directors of Webster Groves School Dist., E. S. Healy, Pres.; F. B. Miller, Secy., receive bids until Aug. 1 to erect school on Gray Ave. between Lockwood and Cedar Aves.; plans and specifications and blank forms from M. P. McArdle, Archt., 1104 Chemical Bldg., St. Louis; 2x101 ft.; 2 stories; cost \$16,000; fireproof and ordinary construction; composition roof; steam heat to cost \$4000; electric lighting.

N. C., Andrews.—Andrews School Dist. has plans by Meyer & Stillwell, Hendersonville, N. C., for high school and will erect structure under supervision of J. H. Jordan, Hendersonville; brick; 2 stories; 8 classrooms, etc.; auditorium to seat 850. (Previously noted.)

N. C., Jamestown.—School Trustees rejected all bids to erect high school; work indefinitely postponed; Joel R. Hill, Archt., Wachovia Bank & Trust Co. Bldg., Winston-Salem. (Lately noted.)

Okla., Helena.—Helena Dist. Com. of Board of Agriculture will erect proposed main building and smaller structure at agricultural school; cost \$40,000.

S. C., Clemson College.—Clemson College opens bids about Jan. 1 to erect Y. M. C. A. building; 3 stories; brick; steam heat and electric lighting from central station; cost \$75,000; opens bids about Sept. 15 to erect hospital; 2 stories; brick; tile roof; steam and electric lighting from central plant; cost \$15,000; R. E. Lee, Archt., Clemson College. (Lately noted to make improvements.)

S. C., Columbia.—Trustees of School Dist. No. 16 of Richland County receive bids until July 24 to erect brick school near Shandon; plans and specifications at office of Geo. E. LaFaye, Archt., 1003 Loan & Exchange Bank, Columbia.

S. C., Ridgeland.—School Dist. votes July 23 on \$10,000 bonds to erect school; C. E. Perry, Secy. Board of Education. (Lately noted.)

S. C., Forkshoals, R. F. D. from Fountain Inn.—Fort School Dist. 2B voted 2-mill tax and will erect graded school. Address Dist. School Trustees.

Tenn., Chattanooga.—Hamilton county votes Aug. 6 on \$200,000 bonds for buildings, additions, repairs and improvements to 31 schools. Address County Commrs.

Tenn., Columbia.—City will expend \$50,000 to erect high school; 191x160 ft.; ordinary construction; Carey roofing; steam (air line return) heat; Hart & Gardner, Archts., Nashville; bids opened July 24. (Lately noted to open bids July 7.)

Tenn., Huntingdon.—Carroll County Board of Education plans to improve schools; will erect \$5000 school at Clarksburg, additions in Twenty-third Dist., additional room at Palmers-Shelters Bldg., etc.; Homer Bennett, R. A. Crider and W. E. Laycock, Bldg. Com.

Tenn., Johnson City.—Sidney G. Gilbreath receives bids until July 25 to erect 5-room school on grounds of State Normal School; plans and specifications at office of D. R. Beeson, Archt., Johnson City.

Tenn., Knoxville.—Shelby County Board of Education, Memphis, Tenn., plans to erect school. (See Tenn., Memphis.)

Tenn., Knoxville.—Knox County Board of Education plans to rebuild Union Grove school lately demolished by storm.

Tenn., Manchester.—City will vote Aug. 15 on \$8000 bonds to erect school. Address The Mayor. (Lately noted to erect \$6000 brick school.)

Tenn., Memphis.—Shelby County Board of Education plans to erect brick school at Kerrville and Highland Heights; cost \$40,000.

Tex., Berclair.—City votes July 23 on \$6000 bonds to erect school. Address The Mayor.

Tex., Dallas.—Board of Education rejected all bids to erect addition to Sam Houston School at cost of \$31,979; 8 rooms; fireproof; steam heat; W. F. Nicol, School Archt., 1523 Busch Bldg., Dallas; new bids received until July 22. (Lately noted.)

Tex., Dallas.—Southern Methodist University is considering plans for proposed athletic stadium; will also erect gymnasium. (Other improvements lately noted.)

Tex., Fort Worth.—Texas Christian University will expend \$30,000 (cost without mechanical equipment) to erect Bible school; 56x80 ft.; 2 stories and basement; fireproof; gravel roof; steam heat to cost \$2500; lighting plant, \$500; Sanguinet & Staats, Archts., Fort Worth; bids opened July 22. (Lately noted.)

Tex., Houston.—School Dist. No. 24 voted \$5000 bonds to erect school. Address Dist. School Trustees.

W. Va., Charleston.—Mason School of Music, W. S. Mason, Pres., has plans by A. G. Higgenbotham, Charleston, for building; 2 stories; 16 rooms and recital hall; brick and stone; colonial style.

W. Va., Fulton.—Town voted \$20,000 bonds to erect fireproof school; A. C. Wagener, Secy. Board of Education. (Previously noted.)

W. Va., Shirley.—Board of Education of McElroy Dist., T. M. Talkington, Secy., will erect 32x60-ft. school; 2 stories; 4 rooms; ordinary frame construction; galvanized iron roof; cost \$3000; W. J. Alexander, Archt., New Martinsville, W. Va.; lately noted to receive bids until July 25. (See Machinery Wanted.)

W. Va., South Charleston.—Board of Education, Loudon Dist., will expend \$15,000 to erect school; 66x78 ft.; 8 rooms and full basement; will construction; Security roofing; fan system of heating, to cost \$2000; Hugh B. de Bord, Archt., 521 Wyoming St., Charleston. (Lately noted to receive bids until July 15.)

STORES

Ala., Birmingham.—Joseph P. Walker has plans by Miller & Martin, Birmingham, for building at 1st Ave. and 23d St.; 2 stories; brick; 2 stories; provision for 2 additional stories later; cost \$15,000; 50x140 ft.; ordinary construction; tar and gravel roof; steam heat; freight elevator.

Ala., Birmingham.—Louis Pizitz leased Burton Hotel adjoining present store and will, it is reported, expend \$15,000 to improve structures; provide 4-story structure, 100x140 ft.

Ark., Little Rock.—Gus and Guy Fulk are reported to erect building on Main St.; 2 stories; 5 stores each, 20x140 ft.; enamel brick front; plate-glass windows.

Ark., Monette.—Dr. N. H. Grady opens bids Aug. 1 to rebuild store; 50x80 ft.; 2 stories; brick; rubber roof; electric lighting. (Lately noted.)

D. C., Washington.—H. Dodek, 829 7th St. N. W., will remodel store at 827 7th St. N. W.; cost \$3400.

D. C., Washington.—A. Burnstine has plans for store and residence. (See Dwellings.)

D. C., Washington.—Alfred Higbie & Co. has plans by N. R. Grimm, Bond Bldg., Washington, for 3-story store and flat at 20th and M Sts. N. W.; brick; cost \$4500.

D. C., Washington.—F. H. Bucher has plans by Waddy B. Wood, 316 Connecticut Ave. N. W., Washington, for five 2-story stores at 9th and I Sts.; brick; slag roof; galvanized iron cornice; structural iron; cost \$5000.

D. C., Washington.—Willard estate has plans by Marsh & Peters, 530 13th St. N. W., Washington, to remodel building at 1308 F St. N. W.; cost \$15,000.

D. C., Washington.—King's Palace, 810-16 7th St. N. W., has plans by Fredk. B. Pyle, Evans Bldg., Washington, to rebuild burned structure; white tile front with 87 ft. of plate-glass show windows; wrought-iron balcony around second-floor windows, etc. (Lately noted.)

Fla., Bradentown.—Bradentown Furniture Co. accepted plans for building at Main and Washington Sts.; 2 stories; brick; 50x85 ft.; elevator; lower floor for stores; upper floors, offices and apartments.

Fla., Bradentown.—I. O. O. F. will erect store, apartment and lodge building. (See Association and Fraternal.)

Fla., Mt. Dora.—J. P. Donnelly will erect building; 2 stories; lower floor for 2 stores; upper floor, apartments.

Fla., St. Augustine.—W. J. Sanchez will erect building on Hospital and Artillery La.; 170x70 ft.; 3 stories; brick; stores on lower floors; apartments above. (Lately noted.)

Ga., Thomson.—R. L. Hadaway will erect 1-story store building; 26x60 ft.; brick; plate glass; tiled vestibule; to be occupied by H. C. McCorkle, who will install fixtures for grocery store; construction begun.

Ga., Washington.—W. T. Johnson will erect store building; brick; cost \$10,000; construction begun; all material purchased except iron front.

Ky., Corbin.—R. Y. Chapel will erect store building.

Md., Baltimore.—Safe Deposit & Trust Co. has plans by Mottu & White, 322 N. Charles St., Baltimore, for alterations to building at 223 W. Baltimore St.

Md., Baltimore.—Hippodrome Co., 410 E. Baltimore St., representing syndicate, has plans by C. M. Anderson, 324 N. Charles St., Baltimore, to remodel structure at N. W. cor. Eutaw and Baltimore Sts. and erect 6-story addition 19x110 ft. for store and warehouse; brick, stone, terra-cotta, marble, concrete, steel, iron and wood; slag roofing; semi-fireproof; steam heat and elevators now in; completed structure 56x110 ft.; bids received until Jan. 22; contractors estimating are: Henry L. Maas, 1119 Ensor St.; Edw. Watters & Co., 509 N. Charles St.; Jos. Schamberger, 2122 E. Baltimore St.; P. J. Cushen, 217-19 St. Paul St.; G. Walter Tovell, Eutaw and McCulloh Sts.; John J. Moylan, 117 E. Center St.; Cowan Bldg. Co., 106 W. Madison St.; Consolidated Engineering Co., Calvert Bldg.; all of Baltimore.

Miss., Greenville.—Chas. Hafter has plans by Mahan & Broadwell, Memphis, Tenn., for store and office building; 4 stories; reinforced concrete; vapor heat; 2 elevators; cost \$60,000.

Mo., Kansas City.—Esterly Garment Co. (Miss Eva Esterly, L. M. Marks and others) is reported to expend \$7000 to improve store building.

Mo., St. Louis.—Bedell Store, J. J. Grau, Gen. Mgr., will erect 6-story building to replace present structure.

Mo., St. Louis.—Marie Drey estate will alter store building at 415 N. 11th St.; cost \$3000.

N. C., Caroleen.—Harrill & Co. will probably rebuild store, reported burned.

N. C., Charlotte.—F. C. Abbott & Co. will erect brick store building; cost \$7200.

N. C., Hickory.—M. H. Yount has plans by Q. E. Herman, Hickory, for store building.

N. C., Littleton.—J. J. Myrick will erect store building.

Tenn., Maryville.—A. K. Harper will erect store building.

Tenn., Memphis.—W. C. Edmondson will expend \$4000 to erect addition to building at 1693 Lamar Ave.

Tenn., Nashville.—Morgan Wilkerson will erect brick building on 15th Ave. near Acklen St.; cost \$7000.

Tenn., Nashville.—W. W. Dillon & Co. will erect building on 2d and 3d Aves. south of Broadway; will contain three stores; brick; automatic sprinkler system; steam heat; electric elevators; double floors.

Tex., Dallas.—J. N. Hunter will erect 2-story brick building at 200-02 W. Jefferson St., Oak Cliff; cost \$7000.

Tex., Dallas.—L. L. Linske will erect 2-story brick building at Tyler and 7th Sts., Oak Cliff; cost \$4000.

Tex., Dallas.—A. L. Bowers will expend \$5700 to repair burned structure at 303 Main St.

Tex., Dallas.—W. L. Thompson will erect 4-story brick store building; cost \$15,000.

Tex., Dallas.—Mrs. E. H. Connerly will erect 2-story-and-basement store at 2200-06 N. Lamar St.; cost \$23,000.

Tex., El Paso.—Horace Broadus is having

plans prepared by O. H. Thorman, El Paso, for store building at Mills and Campbell Sts.; 2 stories; brick; cost \$25,000; also to remodel residence on the Boulevard, changing interior, erecting 2 additional rooms in rear; cost \$4000.

Tex., El Paso.—Laskin Bros. are having plans prepared by Trost & Trost, El Paso, for store building at Broadway and Overland St.; 2 stories and basement; concrete; ground floor dimensions 75x85 ft.

Tex., Fort Worth.—Fort Worth Club opens bids Aug. 1 through Muller & Pollard, Archts., Fort Worth, to erect store, office and club building. (See Bank and Office.)

Tex., Fort Worth.—W. C. Stripling opens bids about Aug. 1 to erect department store; 95x125 ft.; 3 stories and basement; cost (without mechanical equipment) \$125,000; fireproof construction; tar and gravel roof; Sanguinet & Staats, Archts., Fort Worth.

Tex., Houston.—Walter Mushaway will erect 1-story brick store building; cost \$4800.

Tex., San Antonio.—Mrs. Johanne Steves has plans by Leo M. J. Diekmann, San Antonio, for store and office building at St. Mary's and W. Commerce Sts.; 8 stories; 24x148 ft.; steel construction; fireproof; to contain 91 offices.

W. Va., Charleston.—Mrs. A. Bolarsky, 1510 Virginia St., will expend \$50,000 (cost without mechanical equipment) to erect store and office building; 70x100 ft.; fireproof; composition and metal roof; heating and lighting not determined; Weber, Werner & Adkins, Archts., Cincinnati; bids opened July 15. (Lately noted.)

W. Va., Charleston.—Jas. L. Montgomery will erect building to be occupied by Charleston Electric Supply Co.; 39x140 ft.; fireproof; concrete slate roof; steam heat; cost \$30,000; elevator, \$4500; Charleston Electric Supply Co. (lately noted) to erect building. (See Machinery Wanted.)

THEATERS

D. C., Washington.—Palace Amusement Co. has plans by N. T. Haller, Corcoran Bldg., Washington, for moving-picture theater on 14th St.; 50x250 ft.; 2 stories; cost \$20,000.

D. C., Washington.—Tom Moore has plans by Appleton P. Clark, Jr., 816 14th St. N. W., Washington, for 4-story brick and slag roof theater at 434 9th St. N. W.; cost \$50,000.

Fla., Tampa.—Chas. H. Brown, Pres. of Gulf Coast Line R. R., will remodel building for theater and office; 3 stories; will provide white tile front, etc.

Md., Baltimore.—Edw. Rosenstein is having plans prepared by Louis Levi, Real Estate Trust Bldg., Philadelphia, for picture theater at 2011 Pennsylvania Ave.; 77x140 ft.; seat 900; provide for erection later of balcony to seat 500, or dance hall; cost \$28,000; will probably let contract to Singers-Pents Co., Equitable Bldg., Baltimore.

Tenn., Nashville.—Majestic Theater is having plans prepared for S. M. McMurray, Nashville, to remodel theater.

Tex., Laredo.—Mrs. Lila Benavides will erect theater.

W. Va., Flemington.—W. T. Gates will erect theater of logs. (See Machinery Wanted.)

WAREHOUSES

Md., Baltimore.—Hippodrome Co., 410 E. Baltimore St., representing syndicate, has plans to remodel and enlarge building at Eutaw and Baltimore Sts. for store and warehouse. (See Stores.)

Md., Baltimore.—Stewart, Knatz & Co., 301 President St., have plans by Haskell & Barnes, 301 N. Charles St., Baltimore, for warehouse at 501-11 President St.; 4 stories; 56x100 ft.; brick, iron and steel; concrete foundation; contractors estimating are: B. F. Bennett Bldg. Co., 123 S. Howard St.; J. Henry Miller, Inc., Eutaw & Franklin Sts.; Thos. B. Standfield, 100 Clay St.; Edw. Watters & Co., 509 N. Charles St.; Walter E. Burnham, Law Bldg.; all of Baltimore; reported cost, \$50,000. (Lately noted.)

Md., Cumberland.—Builders Supply Co., Chas. E. Schaidt, Pres., will erect warehouse; 100x93 ft.; cost \$12,000; fireproof; concrete roof; stoves; electric lighting; electric freight elevator; Wm. F. Elder, Archt., Cumberland; construction on percentage basis.

Tenn., Chattanooga.—Alabama Great Southern R. R. C. Dougherty, Ch. Engr., Cincinnati, is reported to erect warehouse, etc. (See Railway Stations, Sheds, etc.)

Tenn., Nashville.—W. T. Holt will remodel warehouse at 10th Ave. and Union St.; cost \$9000.

Tex., Fredericksburg.—Farmers' Union

Produce Co. is reported to have purchased site for erection of warehouse.

Tex., Galveston.—Metals Warehouse Co. is reported erecting 2 additional buildings for concentration and distribution of iron and steel; equipped with 10-ton electric crane having span of 100 ft.; will establish fabricating plant equipped with cutting, bending and twisting machinery.

Va., Norfolk.—Thos. S. Southgate has plans by B. F. Mitchell, Norfolk, for warehouse;

300x115 ft.; fireproof; tar and gravel roof over concrete; electric lighting; 9 elevators, separate contract; contractors estimating are: Harwood & Moss, Newport News, Va.; Baker & Brinkley and R. R. Richardson & Co., Norfolk; Metzger & Fisher, Philadelphia; National Fireproofing Co., Pittsburgh, Pa.; J. Henry Miller, Inc., Eutaw and Franklin Sts., Baltimore; Hennebique Construction Co., 1170 Broadway, New York; Alsop & Peirce, Newport News, Va.; bids until July 29.

second floors, marble vestibule, 2 elevators, plumbing system, etc.; Chas. E. Cassell, Archt., 822 Law Bldg., Baltimore.

Md., Mt. Airy.—First National Bank let contract to Hahn & Betson, Frederick, Md., to erect bank building; 43x32 ft.; slag roof; hollow-tile walls; iron-spot brick facing; terra-cotta trimmings; first floor reinforced concrete covered with tile; fireproof; gaso-line lighting; B. E. Kepner, Archt., Frederick. (Lately noted to cost \$9000 to \$10,000.)

Mo., Springfield.—L. W. Dumas, Jr., Construction Co., 414 Guitard Bldg., Columbia. Mo., Gen. Contr. to erect building for Keet estate, let following subcontracts: American Luxfer Prism Co., sidewalk and ceiling lights; American & Venetian Marble Co., tile floors; Kansas City Terra Cotta & Faience Co., terra-cotta; National Marble Co., marble work; Stewart Peck Sand Co., sand; all of Kansas City, Mo.; Christopher & Simpson Iron Work Co., structural steel; St. Louis Wire & Iron Co., elevator enclosures; both of St. Louis; J. J. Hoffman, Milan, Mo., brick work and terra-cotta setting; Love Bros., Aurora, Ill., ornamental iron stairways; J. H. Shackelford, composition roof (tar and gravel); Springfield Planing Mill Co., millwork; Springfield Stone & Fuel Co., cement; Springfield Plumbing Co., plumbing and heating; Walker O'Byrne Electric Co., electric work and telephone conduit; Platte Hardware Co., finish hardware; Lee Savage, painting; all of Springfield; Trussed Concrete Steel Co., Detroit, reinforcing steel and floorplate; Van Kennel Revolving Door Co., 250 W. 54th St., New York, revolving doors; Cutler Mail Chute Co., Rochester, N. Y., mail chute. (Building lately noted to cost \$175,000.)

Tex., Galveston.—Gulf, Colorado & Santa Fe Ry., F. Merritt, Ch. Engr., let contract to remodel building, offices, etc. (See Railway Stations.)

CHURCHES

D. C., Washington.—Gurley Memorial Presbyterian Church let contract to Davis Construction Co., Union Trust Bldg., Washington, to erect chapel at 14th and Meridian Sts. N. W.; main auditorium to seat 400; tapestry brick; Indiana limestone trimming; interior finished in brown ash; 40x80 ft.; fireproof and ordinary construction; slate roof; cost \$15,000; low-pressure steam heat to cost \$1000; electric wiring; materials purchased; Chas. M. Merwin, Archt.

Fla., Wauchula.—First Baptist Church, Rev. J. R. Wells, pastor, let contract to Hiers & Flowers, Wauchula, to erect Sunday-school annex; 20 rooms; ordinary construction; cost \$4000; metal shingle roof; electric lighting; J. B. Long, Archt. (Lately noted.)

Mo., St. Louis.—Church of the Blessed Sacrament let contract to P. H. Bradley, St. Louis, to erect church and rectory at Kingshighway, Northwest and Northland Aves.; blue Bedford limestone; slate roof; ornamental plaster beams in main auditorium; marble mosaic floor; heating, ventilating and vacuum cleaning systems; seating capacity 850, exclusive of gallery; rectory to contain 15 rooms and 4 tile baths; beamed ceiling and brick mantel in dining-room; reported cost \$45,000; Marcus L. Julian, Jr., Archt., St. Louis. (Lately noted.)

Mo., St. Louis.—St. John's Baptist parish let contract to Schroeder & Son, St. Louis, to erect 2-story school and church at 4172 Delor St.; cost \$11,500.

Mo., St. Louis.—Congregation of Shaare Zedek let contract to Kremer & Volro Construction Co., 810 Olive St., St. Louis, to erect portion of synagogue; 1 story and basement; 75x110 ft.; cost \$16,000; fireproof; composition roof; later will install steam heat; electric lighting; concrete sidewalk; Aroner & Somers, Archts., Chicago; all subcontracts let; additional story will be added later, with arched roof over auditorium; total cost of building complete, \$50,000. (Lately noted.)

Tenn., Whiteville.—Methodist Church let contract to B. F. Tisdale, Whiteville, to erect building; brick; cost \$11,400; John Galsford, Archt., Memphis, Tenn.

Tex., Orange.—St. Paul's Episcopal Church let contract to Tom Ellis, Orange, to remodel building.

Va., Petersburg.—Orthodox Hebrew Congregation let contract to G. B. Keeler & Son, Petersburg, to erect synagogue on Market St.; main floor to seat 300 and balcony 100.

W. Va., Charlestown.—Zion Episcopal Church let contract to enlarge parish-house for Sunday-school. (See Miscellaneous.)

CITY AND COUNTY

Ala., Dothan.—City Hall and Theater.—City let contract at \$27,800 to Brown &

Flowers, Dothan, to erect city hall and theater; at \$3300 to W. F. Martin, Dothan, for plumbing, heating and wiring; 3 stories; brick; Morris & Morris, Archts., Atlanta National Bank Bldg., Atlanta. (Lately noted.)

Ga., Columbus.—Hospital.—City will expend \$80,000 (cost without mechanical equipment) to erect hospital; 4 stories and basement; 50x120 ft.; fireproof; reinforced concrete frame; tar and gravel roof; steam heat; electric lighting; electric elevators; E. C. Wachendorff, Archt., Empire Bldg., Atlanta; general contract let to Southern Ferro Concrete Co., Atlanta; contracts for heating, ventilating, plumbing and electrical appliances (lately noted) let. (See Machinery Wanted.)

Ga., Hiwassee.—Jail.—C. A. Raster has contract to erect jail; cost \$4719.

Miss., Borde-Municipal.—Board of Aldermen let contract to W. P. Thompson, Meadville, Miss., to erect town hall, Mayor's office and municipal prison; also adopted proposition to issue bonds for schools.

Mo., Webb City.—Library.—Carnegie Library Directors, Mrs. R. Jenkins, Secy., let contract to E. B. Cosby Construction Co., Muskogee, Okla., to erect library; 54x85 ft.; cost \$23,000; ordinary construction; tile roof; steam heat to cost \$1800; electric lighting, \$1000; Grant C. Miller, Archt., 11 G. S. Michigan Bldg., Chicago.

N. C., Salisbury.—Social Center.—Rowan County Commrs. let contract to A. R. Lazenby, Salisbury, to remodel old courthouse building for social center; 2 stories; brick; roofing not decided; cost \$5000 to \$8000; hot-water heat; electric lighting to cost \$200; J. E. Ramsey, Archt., Salisbury. (Lately noted.)

Okla., Chickasha.—Jail.—Grady County Commrs. let contract to O. Coffman, Chickasha, to erect jail; 32x64 ft.; fireproof; cost \$4000; P. H. Weathers, Archt., Oklahoma City, Okla. (Lately noted.)

Tenn., Greeneville.—Library.—City will let contract to S. M. Beaumont, Knoxville, to erect library; 40x60 ft.; ordinary construction; composition roof; hot-air heat; cost \$10,000; A. T. Simmons, Archt., Bloomington, Ill. (Lately noted.)

COURTHOUSES

Ky., Taylorsville.—General Construction Co., 401 Inter-Southern Bldg., Louisville, general contractor for Spencer county courthouse, let contract for terrazzo work to American Mosaic & Tile Co., Louisville; Falls City Construction Co., Archt., Louisville. (Previously noted to cost \$30,000.)

DWELLINGS

Ala., Birmingham.—E. E. Brown let contract to J. G. Harris, Birmingham, to erect one 2-story and two 1-story residences; frame; cost \$4750.

Ala., Birmingham.—W. B. Leedy & Co. (Agts.) let contract to C. M. Allen, Birmingham, to erect 1-story frame residence; cost \$6500.

Ala., Birmingham.—F. F. Frierson will expend \$4000 to erect dwelling; 8 rooms; 2 stories; mill construction; composition roof; hot-air heat to cost \$175; electric lighting; concrete sidewalks; Miller & Martin, Archts., Birmingham; contract (lately noted) let to O'Rear & Penn, 306 N. 20th St., Birmingham.

Ala., Birmingham.—Dr. C. W. Shropshire will erect residence at Milner Heights; 2 stories; brick veneer; 50x80 ft.; cost \$16,000 to \$18,000; concrete tile roof; hot-water heat to cost \$1200; electric lighting; R. V. LaBarre, Contr., Birmingham; Wm. Leslie Welton, Archt., Birmingham.

Ala., Birmingham.—Mrs. Julia Wittichan will erect 2-story frame dwelling on Milner Heights; cost \$4800; R. V. LaBarre, Contr., Birmingham; Wm. Leslie Welton, Archt., Birmingham.

D. C., Washington.—Thrift Building Co., Union Trust Bldg., let contract to erect 5 dwellings at 1724-32 3rd St. N. W.; cost \$11,000.

D. C., Washington.—W. F. Mentle let contract to J. C. Marsh, Southern Bldg., Washington, to erect residence at 16th and Highland Sts.; 2 stories; 32x48 ft.; brick and hollow tile; galvanized-iron cornice; cost \$4000; W. R. Talbott, Archt., 1314 F St. N. W., Washington.

D. C., Washington.—W. J. Dance let contract to A. H. Aylor, 83 Seaton Pl. N. W., Washington, to erect 3-story brick dwelling at 1654 Fuller St. N. W.; Clarence A. Miller, Archt., 1738 Lamont St. N. W., Washington.

D. C., Washington.—T. E. Holmes let contract to J. W. Fultz, 1535 Olive St. N. E.,

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

D. C., Washington.—J. J. Sullivan let contract to erect apartment and store building. (See Stores.)

Fla., West Palm Beach.—Mr. Newman, Hypoluxo, Fla., let contract to A. Nelson, West Palm Beach, to erect apartment-house; 2 stories; 30x36 ft.; 5 rooms and bath on each floor; concrete block; cement entrance and porch.

Ga., Atlanta.—Dr. Edmond L. Awtrey let contract to Feld Realty Co., Atlanta, to erect apartment-house; 2 stories; 12 suites; brick veneer; English type; exterior finish of rough texture brown brick; green tile roof; front and back porches; cost \$32,000; A. F. N. Everett, Archt., Atlanta. (Lately noted.)

Ga., Savannah.—W. W. Gordon has plans by and let contract to J. de Bruyn Kops, Savannah, to erect building for stores and apartment. (See Stores.)

Md., Baltimore.—Ashburton Apartments Co. has plans by and let contract to Geo. R. Morris, Gunther Bldg., Baltimore, to erect two apartment-houses at Fairview and Dennison Ave.; 3 stories; brick; concrete foundations; slag roofs; steam heat; 36x38 ft.; stucco on brick; gas and electric lighting; cost \$14,500. (Previously noted.)

Mo., St. Louis.—R. A. Perkinson let contract to F. Auferheide, St. Louis, to erect 2-story tenement-house at 2032 Linton St.; cost \$5000.

Mo., St. Louis.—W. W. Culver Real Estate Co. let contract to C. Cunliff, St. Louis, to erect 3-story tenement-house at 5763 Westminster St.; cost \$14,000; will also erect \$1000 one-story garage at above location and 3-story tenement at 517 Kingsbury Pl.; cost \$7000.

Mo., St. Louis.—O. A. Teutenberg let contract to Parke & Pipkin, St. Louis, to erect 2-story store and tenement-house at 6947-49 Manchester St.; cost \$6000.

Mo., St. Louis.—Henry Ehlhardt let contract to Higley Bros., St. Louis, to erect 2-story tenement-house at 3906-08 Lexington St.; cost \$6000.

Mo., St. Louis.—Margaret Atwood let contract to L. Wetzel, St. Louis, to erect 2-story tenement-house at 2023 E. Warne St.; cost \$5600.

Mo., St. Louis.—Joseph Boggiano let contract to Anastasio & Co., St. Louis, to erect 2-story tenement-house at 1562 Burd St.; cost \$3800.

Mo., St. Louis.—Festus J. Dougherty has plans by and let contract to Jno. E. Dougherty, 8025 Reilly Ave., St. Louis, to erect apartment-house; 25x45 ft.; ordinary construction; slate roof; cost \$22,000; cost of heating plant, \$1000. (Lately noted.)

Mo., St. Louis.—R. Telch let contract to L. Richter, St. Louis, to erect 2-story tenement-house and 1-story garage at 2901-03 Accomac St.; cost \$7300.

Mo., St. Louis.—Wm. J. Brown let contract to A. A. McCowan, St. Louis, to erect 2-story tenement-house at 5119 Market St.; cost \$4000.

Mo., St. Louis.—M. Beisman let contract to W. Rous & Son, St. Louis, to erect 2-story tenement-house at 4226-26a 37th St.; cost \$4000.

Tenn., Knoxville.—Knoxville Home Building Co., C. B. Atkins, Prest., let contract to Worsham Bros., 206 Empire Bldg., Knoxville, to erect apartment-house; 90x37 ft.; ordinary construction; cost \$12,000; Albert E. Gredig, Archt., Knoxville. (Lately noted.)

Tenn., Memphis.—N. S. Graves will expend \$3000 to remodel building at 800-04 Court Ave. for apartments; 4 suites of 4 rooms and bath each; J. F. Whitton, contractor; John Galsford, Archt., Memphis.

Tex., El Paso.—H. A. Carpenter is having plans prepared for apartment-house on Piedras St.; cost \$7000; let contract to Phoenix-El Paso Building Co., El Paso.

Va., Charlottesville.—Rev. F. W. Neve will erect apartment-house; 3 stories; 8 suites;

let heating and plumbing contract to M. R. Smith, Charlottesville.

Va., Richmond.—J. F. Crawford will erect 2-story tenement-house at 6-8 S. Sycamore St.; 2 buildings, each 20x54 ft.; ordinary and mill construction; tin roof; grates; gas and electric lighting; cost \$2500 each; plans and construction by owner; contract for plumbing and roofing let to Capitol Plumbing Co., Richmond.

W. Va., Charlestown.—Goetz & Miley let contract to erect store and apartment building. (See Stores.)

W. Va., Clarksburg.—Chas. S. Warne, Prest. of Warne Undertaking Co., let contract to erect building for apartments, etc.

ASSOCIATION AND FRATERNAL

D. C., Washington.—A. F. and A. M. let contract to remodel building on 13th St. between H St. and New York Ave.; cost about \$8700.

Fla., Arcadia.—Woodmen of the World and I. O. O. F. have plans by and let contract to Reed & Murrill, Arcadia, to erect building; 50x72 ft.; brick; gravel on Carey's roofing; electric lighting; cost \$15,000. (Lately noted.)

Md., Baltimore.—Independent Order B'rith Shalom let contract to Ideal Construction Co., Law Bldg., Baltimore, to alter building at 1012-14 E. Baltimore St.; 4 stories; will remodel front; first floor limestone; second and third floors tapestry brick; upper floor terra-cotta; copper roof; 49x150 ft.; bronze doors; steam heat; electric lights; cost \$25,000; Geo. R. Callis, Jr., Archt., Knickerbocker Bldg., Baltimore. (Lately noted.)

Tex., Corsicana.—R. P. O. E. let contract to Berry & Metcalf, Corsicana, to erect building; 52x74 ft.; ordinary construction; composition roof; steam heat; cost \$20,000; Field & Clarkson, Archts., Fort Worth. (Lately noted.)

BANK AND OFFICE

Ala., Birmingham.—Wm. Walker has plans by Wm. C. Weston, Birmingham, for office building to replace burned structure; 4 stories; fireproof; reinforced concrete; white terra-cotta front and side; 50 ft. solid plate-glass frontage on 1st Ave. and 140 ft. on 21st St.; electric passenger elevator; freight elevator in rear; marquee at both entrances; cost \$100,000; let contract to Realty Construction Co., First National Bank Bldg., Birmingham, to prepare excavation and foundation at cost of \$15,000. (Lately noted.)

Ala., Birmingham.—Dr. Alfred A. Walker, 501 Woodward Bldg., plans to erect 4-story building; 25x140 ft.; fireproof; roofing, heating, etc., not determined; cost \$35,000; let contract to Realty Construction Co., First National Bank Bldg., Birmingham, to prepare excavation and foundation at cost of \$1600. (Lately noted.)

D. C., Washington.—Story & Cobb let contract to Boyles-Robertson Construction Co., 1517 H St. N. W., Washington, to erect office building at 1112 Connecticut Ave. N. W.; cost \$13,000; plans by W. B. Wood, 816 Connecticut Ave. N. W., Washington.

Fla., Daytona.—Bingham & Thompson Real Estate & Insurance Co. let contract to E. S. Hall, Daytona, to erect 2-story brick building. (Lately noted.)

Ga., Savannah.—Saml. Blumenthal let contract to erect building for store and offices or stag hotel. (See Stores.)

Ky., Hickman.—R. H. Kirk let contract to erect store and office building. (See Stores.)

Md., Arlington.—Commercial Bank of Maryland let contract to C. C. Watts, 113 W. Hamilton St., Baltimore, Md., to erect bank building at Main and Belvidere Aves.; 2 stories; 50x60 ft.; cost \$10,500; Owens & Sisco, Archts., Continental Bldg., Baltimore. (Lately noted.)

Md., Baltimore.—American Indemnity Co. let contract to Henry Smith & Sons Co., 7 E. German St., Baltimore, to remodel Carrollton Hotel on St. Paul St. between Baltimore and Fayette Sts. for office building; will construct plate-glass front at first and

Washington, to erect residence at 6630 Whit-
tler St. N. W., to cost \$3000; Archt., A. R.
Lindsay, Washington.

D. C., Washington.—W. A. Boss let con-
tract to W. E. Payne, 3048 N. St. N. W.,
Washington, to erect 5 dwellings from 621-29
18th St. N. E.; cost \$5000.

Fla., Clearwater.—M. F. Snyder let con-
tract to J. F. Bennett, Clearwater, to erect
residence on N. Fort Harrison St.

Fla., Ocala.—W. J. Frink will erect 2 cot-
tages; 7 rooms each; 2 stories; ordinary
construction; cypress shingle roof; cost
\$3000 each; contract let to O. C. Stoops,
Summerfield, Fla.

Fla., St. Augustine.—Clarence R. Rogero
let contract to Louis Leonardi, St. Augus-
tine, to erect residence; 1½ stories; bunga-
low type; verandas; fireproof; cost about
\$5000.

Ga., Atlanta.—A. C. Walters let contract
to J. H. Estes, Atlanta, to erect residence
near Buckhead; 2 stories; stone veneer;
slate roof; hardwood floors; plumbing;
electric lighting; cost \$8000; Leila Ross Wil-
burn, Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—W. C. Walters let contract
to J. H. Estes, Atlanta, to erect residence at
Buckhead; 1 story; frame; stone founda-
tion; hardwood floors; plumbing; electric
lighting; cost \$3400; Leila Ross Wilburn,
Archt., Peters Bldg., Atlanta.

Ga., Atlanta.—Mrs. Lucy C. Higgs let con-
tract to C. Shelverton, Fourth National
Bank Bldg., Atlanta, to erect 2-story resi-
dence; frame; brick foundation; tile and
hardwood floors; slate roof; let contract for
vapor-heating equipment and plumbing to
Smith & Guest, Atlanta; cost \$7000; Leila
Ross Wilburn, Archt., Peters Bldg., Atlanta.

Ga., Augusta.—Geo. R. Lombard, 248 Broad
St., let contract to E. W. Hancock, Augusta,
to erect two 6-room dwellings; 2 stories;
cost \$1500 each; corrugated galvanized roof;
cement sidewalks. (Lately noted.)

Ga., Columbus.—Mrs. W. R. Moore let con-
tract to E. A. Jones to remodel and enlarge
residence; steam heat; hardwood floors;
marble mantels; sleeping porches; T. F.
Lockwood, Archt., Montgomery, Ala.

Ga., Cordele.—Fred Fenn let contract to
Cordele Sash, Door & Lumber Co., Cordele,
to erect \$5000 residence.

Ga., Jackson.—W. H. Merritt let contract
to Butts Lumber Co., Jackson, to erect 7-
room residence.

Md., Baltimore.—Gordon P. Paine let con-
tract to G. Walter Tovell, Eutaw and Mc-
Culloh St., Baltimore, to erect residence at
Gulfport according to plans by Frank A.
Colby, 225 5th Ave., New York. (Previously
noted.)

Md., Baltimore.—Liberty Heights Building
Co. let contract to J. C. Clark & Son, 1925
Pennsylvania Ave., Baltimore, to erect resi-
dence on Granada Ave.; 2½ stories; frame;
27x32 ft.; cost \$3500; F. E. Beall, Archt., 306
St. Paul St., Baltimore.

Md., Baltimore.—Chas. Nemphos, 3252 Ce-
dar Ave., let contract to Thompson-New-
berry Co., Hoffman Bldg., Baltimore, to
erect number of dwellings at 36th St. and
Falls Rd.; 2 stories; brick; 15.6x42 ft.; cost
\$9000; Callis & Callis, 2055 Kennedy Ave.,
Baltimore.

Md., Baltimore.—Collin McLean let con-
tract to McLean Contracting Co., 1411 Fide-
lity Bldg., Baltimore, to rebuild Ingram resi-
dence on Park Heights Ave.; slate roof;
hot-water heat; Haskell & Barnes, Archts.,
301 N. Charles St., Baltimore. (Lately
noted.)

Md., Baltimore.—Chester B. Turnbull let
contract to Raymond E. Chambers, 36th St.
and Roland Ave., to erect residence at
Cedarcroft; 2 stories; Bayard Turnbull,
Archt., 328 N. Charles St., Baltimore.
(Lately noted.)

Md., Lauraville.—Henry B. Eggers, 852 W.
North Ave., Baltimore, Md., let contract to
Webb & White, Title Bldg., Baltimore, to
erect cottage at Alisa Ter.; 2½ stories;
slate roof; hot-water heat; porches at front,
side and rear. (Lately noted.)

Md., Mt. Washington.—Wallace MacWill-
iams, 111 Chamber of Commerce, Baltimore,
let contract to Henry Smith, Harford Ave.,
Lauraville, Md., to erect dwelling at Hill
Top Park; 2½ stories; slate roof; hot-water
heat; hardwood floors; cost, including site,
\$9000; J. Henry Tinley, Archt., 312 N. Charles
St., Baltimore. (Contractor lately noted as
J. Henry Smith, 1436 Light St.)

Miss., Hernando.—R. L. Redding let con-
tract to J. E. Wright, Memphis, Tenn., to
erect residence; stone veneer; cost \$15,000;
W. B. Boone, Archt., Memphis, Tenn.

Mo., St. Louis.—Church of the Blessed
Sacrament let contract to erect church and
rectory. (See Churches.)

Mo., St. Louis.—W. B. Thurman let con-
tract to J. E. Earendt, St. Louis, to erect
2-story dwelling at 5152 Washington St.;
cost \$5500.

Mo., St. Louis.—Geo. Tretter let contract
to E. Hartman, St. Louis, to erect 1-story
dwelling at 7915 S. Broadway; cost \$3000.

Mo., St. Louis.—A. F. Richardson let con-
tract to F. Menke, St. Louis, to erect 2-story
dwelling at 2301 Holly St.; cost \$5000.

Mo., St. Louis.—E. A. Peters let contract
to erect store and tenement-house.

Mo., St. Louis.—Rev. P. V. Schempf let
contract to A. Degenhardt, St. Louis, to
erect 2-story dwelling at 4225 S. Compton
St.; cost \$14,000.

Mo., St. Louis.—H. C. Howard let con-
tract to Bush-Burns Realty Co., St. Louis,
to erect seven 1-story dwellings at 4524-42
Ashland St.; cost \$14,000.

Mo., St. Louis.—J. Maher, Jr., let con-
tract to Bush-Burns Realty Co., St. Louis,
to erect two 1-story dwellings at 4517-19
Lexington St.; cost \$4000.

N. C., Asheville.—B. C. McVey, Grand
Rapids, Mich., let contract to W. G. Wrenn
& Co., Asheville, to erect bungalow-type
residence in Kenilworth Park; cost \$6500.

N. C., Asheville.—H. D. Miles, Chicago, let
contract to G. W. Wrenn & Co., Asheville,
to erect dwelling in Albemarle Park; stone
construction; hardwood interior finish; cost
\$17,000.

N. C., Biltmore.—G. W. Wrenn & Co.,
Asheville, have contract for additions to
Biltmore House, including additional bath-
rooms, etc.

N. C., Winston-Salem.—Dr. C. L. Summers
let contract to J. H. Grubbs, Winston-Salem,
to erect 12 dwellings; 1 story; frame; shingle
roofs; city water; cost \$6300.

N. C., Winston-Salem.—A. P. Tilley will
erect dwelling; cost \$3500; 7 rooms and
bath; ordinary construction; shingle roof;
grates and flues; cost of electric lighting,
\$49; contract let to Winston-Salem (N. C.)
Construction Co.

S. C., Greenville.—J. Robt. Martin let con-
tract to T. T. Mahoffey, Greenville, to erect
dwelling; 2 stories; brick veneer; cost \$5000
to \$6000; cypress-shingle roof; hot-air heat;
J. T. Lawrence, Archt., Greenville; lately
noted. (See Machinery Wanted.)

Tenn., Bristol.—N. H. Masengill let con-
tract to J. H. Reynolds Lumber Co. to erect
residence; 30x50 ft.; cost \$5300; metal tile
roof; hot-water heat; Clarence Kearfott,
Archt., Bristol. (Lately noted.)

Tenn., Dyersburg.—Cumberland Presby-
terian Church let contract to Sam Blyven,
Dyersburg, to erect manse; 2 stories; brick
veneer; steam heat.

Tenn., Memphis.—G. T. Brodnax let con-
tract to D. M. Crawford & Co., Memphis, to
erect residence at Castella St. and Park-
way; frontage 140 ft.; stone and pebble-dash
effect over stucco; hollow tile walls; 3
baths; sleeping porches; cost about \$30,000;
John Gaisford, Archt., Memphis. (Previous-
ly noted.)

Tex., Houston.—I. Baker let contract to
erect two 7-room residences; cost \$3750.

Tex., Houston.—Jno. A. Deering has plans
by and let contract to A. J. Miller, 917 Car-
ter Bldg., Houston, to erect dwelling; 30x40
ft.; fireproof; tile roof; electric lighting;
cost \$6500. (Lately noted.)

Va., Mitchell.—Mrs. L. R. Sommerville let
contract to J. C. Marsh, Southern Bldg.,
Washington, D. C., to erect residence; 2 sto-
ries; frame; shingle roof; 53x33 ft.; cost
\$9000; W. R. Talbott, Archt., 1314 F St. N.
W., Washington.

W. Va., Bluefield.—Clarence McClaugherty
is erecting 2 dwellings on Bluefield Ave.; 7
rooms each; cost \$3000; ordinary construc-
tion; metal roof; heating not decided; gas
and electric lighting; contract let to R. L.
Morris, Bluefield.

W. Va., Grafton.—Shackelford & Sons Co.
has contract to remodel and enlarge Klein
building for store and dwelling. (See
Stores.)

W. Va., Parkersburg.—Dr. C. L. Muhleman
and Mrs. J. Loyal Gilbert let contract to
L. C. Polling, Parkersburg, to erect double
brick residence at 1030 Juliana St.; 44x56 ft.;
2 stories and basement; cost \$9000; brick ve-
neer; slate roof; natural-gas heat and fire-
places; gas and electric lighting; R. H.
Adair, Archt., Parkersburg.

GOVERNMENT AND STATE

Ark., Newport—Postoffice.—Treasury Dept.,
Oscar Wenderoth, Supervising Archt., Wash-
ington, D. C., is reported to have let con-
tract at \$40,736 to E. Anderson, Clarksville,

Tex., to erect postoffice; limestone. (Lately
noted to have let contract to another con-
tractor.)

D. C., Washington—Hospital.—Government
let contract to W. H. McCray, Bond Bldg.,
Washington, to erect addition to Walter B.
Reid Hospital; 45x54 ft.; cost (without me-
chanical equipment) \$19,500; semi-fireproof;
composition roof; hot-water heat to cost
\$2100; electric lighting, \$300. (Lately noted.)

Md., Baltimore—Penitentiary.—State let
contract to Cowan Bldg. Co., 106 W. Madison
St., Baltimore, to improve State Peniten-
tiary, including erection of 4th story to hos-
pital and roof garden; cost \$30,000; F. E.
Torrey, Archt., 813 Newington Ave., Balti-
more. (Lately noted.)

N. C., Gastonia—Postoffice.—Treasury
Dept., Oscar Wenderoth, Supvr. Archt.,
Washington, D. C., let contract at \$52,254 to
W. J. Brent, Norfolk, to erect postoffice;
limestone; 1 story and basement; 4810 sq.
ft. ground area; stone and brick facing;
composition roof. (Lately noted.)

W. Va., Terra Alta—Sanitarium.—State
Board of Control, Charleston, W. Va., let
contract at \$27,000 to Chas. E. Spindler,
Kingwood, W. Va., to erect 4 additional
buildings at State Tuberculosis Sanitarium;
frame concrete foundations. (Lately noted.)

W. Va., Welch—Home.—State Board of
Control let contract at \$13,479 to Sluss-
Baker Construction Co., Graham, Va., to
erect Nurses' Home at Miners' Hospital No.
1; 2 stories; brick; 40x76 ft.; mill construc-
tion; slate roof; cost of heating, \$1500.
(Lately noted.)

HOTELS

Fla., St. Augustine.—A. V. Monson let con-
tract to W. A. Bostick, St. Augustine, to
erect hotel to replace burned structure at
Baya Le and Bay St.; 40 to 60 rooms; 3
stories; 63x76 ft.; fireproof; brick walls with
stucco exterior finish; front porch on lower
floor 12x66 ft.; porch on second floor; hot
and cold water; steam heat; cost (without
mechanical equipment) \$14,000; hard burnt
clay tile and tin roof; gas and electric light-
ing, \$300; install elevator later; F. A. Hen-
derick, Archt., St. Augustine; previously
noted. (See Machinery Wanted.)

Fla., Tampa.—Tampa Bay Hotel and city
are reported to expend \$40,000 to \$50,000 for
improvements to Tampa Bay Hotel; repair
roofs; add rainspouts; this work under
supervision of Harry Howard; also alter in-
terior under direction of F. M. Curtis,
Archt., Tampa; will provide 20 bathrooms,
plumbing under direction of H. A. Van Bors-
sum; carpentry work under direction of B.
F. Walker & Son; will practically install
new heating plant; let contract for uphol-
stering work to Rhodes-Pearce-Mahoney Co.

Ga., Atlanta.—Piedmont Hotel, W. C. Rog-
ers, Mgr., will erect addition to kitchen, ice
boxes and install 25 additional baths; plum-
bing contract let to W. D. Yarbrough, At-
lanta; H. Bleckley, Archt., Empire Bldg.,
Atlanta. (Lately noted.)

Ga., Canton.—Griffin Construction Co., At-
lanta, has contract to erect hotel; 30x30 ft.;
ordinary construction; shingle roof; steam
heat; cost \$8000.

Ga., Rome.—A. M. Walkup Co., Richmond,
Va., general contractor to erect hotel for
Broad St. Hotel Co., let following subcon-
tracts: Norfolk (Va.) Iron and Wire Works,
iron and steel; R. A. Requarth Co., Dayton,
O., mill work; N. W. Martin & Bro., Rich-
mond, Va., roofing and sheet metal; Walker
Plumbing & Electric Co., electric wiring;
Rome Supply Co., plumbing and heating;
Rome Machine & Foundry Co., stacks; all
of Rome; Capitol Stone Co., granite; Otis
Elevator Co., elevators and lifts; both of
Atlanta; Maryland Terra-Cotta Co., terra-
cotta, Baltimore; Guilford Marble & Tile
Co., Greensboro, N. C., marble tile and ter-
razzo; I. H. Murphy & Sons, Chattanooga,
painting; Robt. McLeod, Birmingham, plas-
tering; A. Ten Eyck Brown, Archt., Atlanta.
(Previously noted.)

Ga., Savannah.—Saml. Blumenthal let con-
tract to erect building for stores and offices
or hotel. (See Stores.)

N. C., Asheville.—Albemarle Park Co. let
contract to Biltmore Plumbing & Heating
Co., Biltmore, N. C., to install heating and
plumbing in hotel to cost \$50,000; balance of
work by day labor; W. T. Downing, Archt.,
Atlanta. (Previously noted.)

N. C., Gastonia.—Armington Hotel let con-
tract to J. A. Gardner, Charlotte, N. C., to
erect hotel; 93x56 ft.; cost (without me-
chanical equipment) \$40,000; ordinary con-
struction; tin roof; low-pressure steam
heat; electric lighting; Hook & Rogers, ar-
chitects, Charlotte. (Lately noted.)

MISCELLANEOUS

Ky., Louisville—Armory.—Saengerfest As-
sociation let contract to Paradis Construc-
tion Co. to construct seats, platforms, boxes,
etc., in armory; cost \$4000; Brinton B. Davis,
Archt., Louisville. (Previously noted.)

Tex., Galveston—Sheds.—Harris-Irby Con-
centration Co. let contract to Fred Hartel,
Galveston, to erect cotton concentration
sheds; 240x300 ft. and 175x300 ft.; ordinary
construction; sides and roofs of corrugated
iron; cost \$30,000 to \$40,000.

W. Va., Clarksburg—Undertaking Parlor.—
Chas. S. Warne, Prest. of Warne Und-
ertaking Co., let contract to erect undertak-
ing parlors, etc. (See Stores.)

W. Va., Charlestown—Parish-house.—Zion
Episcopal Church let contract to Frank O.
Trump, Kearneysville, W. Va., to erect addi-
tion to parish-house for Sunday-school; 32x45
ft.; cost \$5000; ordinary construction; slate
roof; cost of heating plant \$750; electric
lighting, \$250.

RAILWAY STATIONS, SHEDS, ETC.

Ga., Savannah.—Savannah Electric Co. let
contract to A. A. Artley, Savannah, to
erect car barn to replace burned structure;
mill construction; cost \$25,000. (Previously
noted.)

S. C., Spartanburg.—Piedmont & Northern
Ry. Co., A. C. Lee, Engr. M. of W., Green-
ville, S. C., will expend \$40,000 to erect ware-
house and depot; 108x110 ft.; mill construc-
tion; Barrett's specification roof; electric
wiring (separate contract); J. E. Sirrine,
Archt., Greenville, S. C.; contract (lately
noted) let to J. A. Jones, 404 Realty Bldg.,
Charlotte, N. C.

Tex., Galveston.—Gulf, Colorado & Santa
Fe Ry., F. Merritt, Ch. Engr., let contract
to American Construction Co., Houston,
to remodel old union depot and office building
for offices, etc.; cost \$14,000.

Va., The Plains.—Southern Ry., B. Her-
man, Ch. Engr., 1300 Pennsylvania Ave.,
Washington, D. C., let contract to J. P.
Pettyjohn & Co., Lynchburg, Va., to erect
passenger station; 20x100 ft.; ordinary con-
struction; tile roof; cost \$10,000.

SCHOOLS

Ga., Monroe.—City let contract to R. W.
& E. W. Smith, Atlanta and Cartersville,
Ga., to erect school; 2 stories; 5 rooms;
brick veneer; brick and stone trim; tar and
gravel roof; cost \$14,000; Morris & Morris,
Archts., Atlanta National Bank Bldg., At-
lanta. (Lately noted.)

Ky., Shelbyville.—Trustees of Shelby
Graded School let contract on percentage
basis to Gruber & Doss, Shelbyville, Ky., to
remodel graded school; cost \$5000; Joseph
& Joseph, Archts., Louisville.

Md., Brentwood.—Burgess & Parsons, 700
10th St. N. W., Washington, have contract
to erect addition to school after plans by
Hunter & Bell, Southern Bldg., Washing-
ton, D. C.; 2 stories and basement; cost
\$14,490.

Miss., Greenville.—Greenville Academy will
expend \$10,000 to erect school; 33x83 ft.; 3
stories; brick; asbestos roof; steam heat to
cost \$1000; electric lighting; W. H. Parker,
Archt., Greenville; contract (lately noted)
let to T. P. Reynolds, Greenville; materials
purchased.

Miss., Meridian.—City let contract at \$13,
256.57 to F. Hopkins, Meridian, for repairs
and additions to East End, West End and
South Side schools; C. M. Card, Archt.,
Meridian. (Lately noted.)

Mo., Blodgett.—School Board let contract
to Price & Millers, Chaffee, Mo., to erect
school.

Mo., St. Louis.—City let contract at \$70,247
to Kremer & Volrol Construction Co., St.
Louis, to erect first 3 cottages at Bellefon-
taine Farms; gray brick; red tile roofs;
each cottage to accommodate 25 boys and
attendants; completion Nov. 15. (Lately
noted.)

Mo., St. Louis.—Board of Education let
contract to McClure Construction Co., St.
Louis, to erect 16 one-story portable schools;
cost \$15,000.

Mo., St. Louis.—St. John's Baptist parish
let contract to erect school and church.
(See Churches.)

N. C., Bahama.—Bahama Farm Life School
Trustees let contract to erect dormitory.

N. C., Winston-Salem.—City let contract
at \$5813 and \$12,634, respectively, to J. L.
Crouse, Greensboro, N. C., to erect 4-room
brick addition to West End graded school
and 2-story 8-room brick building, 115x47 ft.,
on Woodland Ave. (Lately noted.)

Okl., Stillwell.—Board of Education let contract to Archer & Wooten, Joplin, Mo., to erect school; 2 stories; 4 rooms; tar and gravel roof; cost \$6500; steam heat, \$3500; C. M. Sudboelter Co., Archt., Joplin, Mo. (Lately noted.)

S. C., Andrews.—Trustees let contract to B. E. Grandy & Sons, Sumter, S. C., to erect school building; ordinary construction; metal roof; cost \$7500; Todd & Benson, Archts., Charleston, S. C. (Lately noted.)

S. C., Spartanburg.—Miss Gwynn's Boarding School for Girls let contract to P. J. O. Smith & Son, Spartanburg, to erect building; 50x95 ft.; 2 stories; ordinary construction; metal shingle roof; cost \$11,000; L. D. Proffitt, Archt., Spartanburg. (Lately noted.)

Tenn., Alamo.—City let contract to Chas. W. Williams, Jackson, Tenn., to erect school; 2 stories and basement; brick and concrete; steam heat; cost \$12,000.

Tex., Abilene.—Christian College let contract to R. C. Lewis, Abilene, at \$14,101 (exclusive of plumbing and heating) to erect dormitory; M. L. Waller, Archt., Fort Worth.

Tex., Victoria.—Victoria Independent School Dist. let contract to F. E. Page, Victoria, to erect school; brick; 6 classrooms; 2 stories; 5-ply standard Barrett tar and gravel roof; cost \$15,000; Hull & Praeger, Archts., Victoria.

W. Va., Elkins.—King Lumber Co., Charlottesville, Va., general contractor to erect school building, let bricklaying contract to Robbins & Tyler, Elkins. (Other contracts lately noted.)

STORES

D. C., Washington.—J. J. Sullivan has plans by and let contract to J. H. McIntyre, 1421 33d St. N. W., Washington, to erect store and apartment building at 1301-05 35th St. N. W.; 40x60 ft.; cost \$10,000; ordinary construction; tin roof; hot-water heat to cost \$1200; gas and electric lighting, \$420; bar-lock doors with lights; subcontracts not all let.

Ga., Atlanta.—Geo. H. Fauss let contract to Moise De Leon, Walton Bldg., Atlanta, to erect business building; 30x100 ft.; ordinary construction; tar and gravel roof; vapor heat; cement sidewalks; cost \$10,000; Warren C. Powell, Archt., Candler Bldg., Atlanta; materials purchased.

Ga., Quitman.—J. B. Rountree let contract to erect furniture store; 54 ft. 6 in. by 104 ft. 6 in.; 2 stories; ordinary construction; tin roof; cost \$6500. (See Machinery Wanted.)

Ga., Savannah.—Maj. W. W. Gordon will erect building at Drayton St. and Jones La.; 20x50 ft.; 2 stories; brick; 2 stores on first floor; second floor for 5-room-and-bath apartment; plate-glass front; cost \$4500; ordinary construction; Barrett specification roof; plans and construction by J. de Bruyn Kops, Savannah; subcontracts as follows: Electrical Agency, electric work; M. J. Cavey, plumbing; both of Savannah.

Ga., Savannah.—Saml. Blumenthal will erect building on Broughton St.; 3 stories; steel and white brick; 60x60 ft.; ground floor for stores with plate-glass fronts; 30 rooms on upper floors for offices or hotel; cost \$40,000; Woolard & Cunningham, Contrs., Savannah; plans to erect structure adjoining within several months.

Md., Baltimore.—Castleberg National Jewelry Co., 106 N. Eutaw St., let contract to Singer-Pentz Co., 600 Equitable Bldg., Baltimore, to alter building at 322 W. Baltimore St.; will provide copper and plate-glass store front; low-pressure steam heat; electric lights; Louis Levi, Archt., Real Estate Trust Bldg., Philadelphia. (Lately noted.)

Md., Baltimore.—Jenkins & Jenkins will expend \$60,000 to erect store; 145x23 ft.; fireproof, first floor; wood joists above; slag roof; Baldwin & Pennington, Archts., Professional Bldg., Baltimore; contract (lately noted) let to Morrow Bros., Fidelity Bldg., Baltimore.

Md., Baltimore.—M. S. Kahn & Co. let contract to Morrow Bros., Fidelity Bldg., Baltimore, to alter store at Lexington and Liberty Sts.; cost several thousand dollars.

Md., Baltimore.—Footer's Dye Works let contract to Blake & Engle, Law Bldg., Baltimore, to erect rear addition, front, etc., and otherwise alter building on Howard St.; cost about \$4000; John Freund, Jr., Archt., Hoffman Bldg., Baltimore.

Mo., St. Louis.—O. A. Teutenberg let contract to erect store and apartment-house. (See Apartment-houses.)

Tex., Waco.—C. H. Higginson let contract to Gross Construction Co., Oklahoma City, to erect store building; 3 stories; fireproof;

steam heat; 75x60 ft.; cost \$10,000; Milton W. Scott, Archt., Waco. (Previously noted to erect 2-story building.)

W. Va., Clarksburg.—Chas. S. Warne, Prest. of Warne Undertaking Co., let contract to J. E. White, Clarksburg, to erect building for store, undertaking parlors and apartments; 3 stories; 45x127 ft.; steel, stone and brick; lower floor for 2 stores, 20x110 and 25x110 ft.; 4 apartments on upper floors; cost \$27,000.

W. Va., Grafton.—Shackelford & Son Co. has contract to repair Klein building; will erect 45-ft. addition in rear; 2 upper floors remodeled for dwelling, etc.

THEATERS

Ala., Dothan.—City let contract to erect city hall and theater. (See City and County.)

Mo., St. Louis.—H. Gallant let contract to L. W. Peters, St. Louis, to erect 1-story picture theater at 1420 Market St.; cost \$8000.

Tenn., Knoxville.—Swenson estate let contract to L. A. Galyon & Son, Knoxville, to remodel theater; will enlarge balcony, provide 500 additional seats, make structure fireproof, etc.; cost \$12,000; L. C. Waters, Archt., Knoxville; no subcontracts. (Lately noted.)

WAREHOUSES

Ark., Pine Bluff.—B. B. Well let contract to R. M. Galbraith to erect cotton warehouse; 100x154 ft.; cost \$12,000.

D. C., Washington.—G. A. and M. C. Diden awarded contract to McKay & Morris, 1336 G St. N. W., Washington, to erect warehouse at 52 O St.; cost \$29,000.

Ky., Glasgow.—Planters' Loose Leaf To-

bacco Warehouse Co. let contract to Empire Building Co., Lexington, Ky., to erect warehouse; 130x200 ft.; mill construction; Carey's roofing; electric lighting; cost \$12,000; hand-power elevator to cost \$150; F. J. Manly, Archt., Lexington. (Previously noted.)

Md., Baltimore.—Geo. G. and C. D. Rudolph, 1108-10 Light St., have plans by and let contract to J. Harrison, 1015 Light St., Baltimore, to erect warehouse in rear of present structure; 2 stories; brick; 25x55 ft.; cost \$3000.

S. C., Greenville.—Piedmont & Northern Ry. Co., A. C. Lee, Engr. M. of W., will expend \$30,000 to erect warehouse at McBee & Piedmont Aves.; includes 7 buildings; 160x90 ft.; heavy mill construction; Barrett specification tar and gravel roof; electric freight elevator; F. H. & J. G. Cunningham, Archts., Greenville; contract (lately noted) let to Fiske-Carter Construction Co., Greenville, and Worcester, Mass.

Tex., Dallas.—American Paper Stock Co., St. Joseph, Mo., is reported to erect warehouse; 2 stories; total investment, \$10,000; Lang & Witchell, Archts., Dallas; Wm. Davies, Contr., Dallas.

Tex., Houston.—Houston Lighting & Power Co., 1201 Capitol Ave., let contract to John Stadler to erect storeroom and garage; 150x80x50 ft.; cost \$14,000; fireproof; cement roofing; steam radiators; lighting and power supplied from central station service; Frank G. Frost, Archt., Electric Bldg., Houston. (Lately noted.)

Tex., Victoria.—Victoria Mfg. Co. let contract to S. M. Bailey to erect warehouse; 51x100 ft.; one story; mill construction; brick walls and fire doors; cost \$6000; Hull & Praeger, Archts., Victoria.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Reform.—Alabama, Tennessee & Northern R. R., according to a rumor, is considering a proposal that it build an extension north from Reform to Winfield, Ala., about 40 mi., to meet an extension of the Illinois Central which may be built south from Haleyville, about 20 mi., to meet its own line now out of Winfield. John T. Cochrane, Mobile, Ala., is Prest. of the A., T. & N.

Ark., Genoa.—J. H. Copeland of Homan, Ark., is building a 3-mi. lumber railroad from there to Motz.

Ark., Murfreesboro.—Memphis, Dallas & Gulf R. R. expects to complete extension between Murfreesboro and Glenwood, 36 mi., in October. George & Barber of Shreveport, La., are contractors. Sixty per cent. of grading is done.

Ark., Nashville.—Memphis, Dallas & Gulf R. R. will soon begin revision of line between Glenwood and Peary, Ark., reducing grades and eliminating curves. C. W. Dodson is general superintendent at Nashville.

Ga., Moultrie.—Moultrie Southwestern Ry. Co. gives notice of application for charter to build from Moultrie southwest through Mitchell and Thomas counties, touching either of the towns of Melgs, Hansell or Ocklocknee, and continuing in the same direction through Grady county to a point in Decatur county on the Florida boundary. Length of line about 85 mi.; capital stock, \$60,000 common and \$40,000 7 per cent. preferred; headquarters at Moultrie. Incptrs.: I. W. Myers and L. P. Skeen of Tifton, Ga.; T. J. Aycock of Jacksonville County, Fla.; W. E. Aycock, A. Huber, G. T. Demott, G. A. Horkan, Howard Ashburn and R. J. Corbett of Moultrie, Ga.

Ga., St. Mary's.—Proposed extension of the Atlantic, Waycross & Northern Ry. Co. is from Kingsland to Folkton, about 20 mi. Line may eventually extend across the State, approximately 200 mi. Capt. L. Johnson, St. Mary's, is Prest.; L. A. Wilson, Waycross, Ga., is Secy.

Ky., Paducah.—Paducah & Illinois R. R. Co., which is about to begin construction of a 12½ mi. line from Island Creek, Ky., opposite Metropolis, Ill., where the new Burlington bridge will be built, to Paducah, has been granted right to cross public roads with its tracks. Only two of eight crossings will be at grade. There will be four tracks for 8 mi. C. H. Brodbeck is engineer.

Ky., South Cairo.—Mobile & Ohio R. R., it is reported, has set aside \$5,000,000 to build bridge over Ohio River between South Cairo and Cairo, Ill. R. V. Taylor, Mobile, Ala., is V.-P. and Gen. Mgr.

Md., Frederick.—Hagerstown & Frederick Ry. Co. has under consideration a proposition that it build an extension from Thur-

mont to Emmitsburg, Md., about 7 mi.; also another extension from Williamsport, Md., to Martinsburg, W. Va., about 12 mi. E. L. Coblenz of Frederick is Prest. He says it is not contemplated to make these extensions at present.

Md., Oakland.—Davis Coal & Coke Co. has just completed a railroad spur 3 mi. long from Wilsona to a proposed new coal operation in this (Garrett) county, Maryland, near Fairfax Stone, at the headwaters of the Potomac River.

Miss., Beaumont.—New Orleans, Mobile & Chicago R. R. has filed deeds for some rights of way on its proposed extension from Beaumont to a connection with the Louisville & Nashville R. R. W. F. Owen, Mobile, Ala., is receiver.

Miss., Columbus.—Columbus Lumber Co. is reported planning construction of a railroad from Columbus to Winfield, Ala., about 50 miles.

Miss., Meridian.—Stockholders of the Memphis & Pensacola R. R. Co. have authorized an issue of \$14,000,000 of 5 per cent. 30-year bonds to complete the line now under construction from Pensacola toward Meridian. W. P. Dickinson of Chicago is interested. John Clancy of that city is Prest. and A. A. Rolf, Secy. McBeath & Miller of Meridian are counsel.

Mo., St. Louis.—The \$555,000 of 6 per cent. improvement bonds of the Chicago & Alton R. R., issue of which was recently authorized by the Missouri Public Service Com., is to reimburse the company for improvements already made, not for any new construction contemplated.

N. C., Andrews.—Hiwassee Valley R. R. Co., chartered last year to build from Andrews via Hayesville, N. C., to Hiwassee, Ga., about 35 mi., is reported to have awarded contract, construction to begin within 60 days. J. Q. Barker of Andrews and others are interested.

N. C., Jefferson.—Construction of the extension of the Virginia-Carolina Ry. is progressing steadily, and rails are now laid nearly to Jefferson. The line will be continued immediately to Todd, N. C., as proposed. W. E. Mingee, Abingdon, Va., is Prest.

N. C., Mount Olive.—Newton Grove township has voted \$45,000, Westbrooks \$25,000 and Wolfschape \$25,000 of bonds to aid construction of the proposed Central Carolina Railroad, promoted by W. J. Edwards of Sanford, N. C., to run from Lillington via Mt. Olive and other places to Swansboro, about 110 mi.

S. C., Charleston.—Raymond R. Eagle of Newbern, N. C., is reported, will make survey for a proposed railroad at and near Charleston.

Tenn., Dickson.—Nashville, Chattanooga &

St. Louis Ry. is reported surveying for a cutoff from Dickson to Kingston Springs, about 20 mi., to avoid heavy grades. Hunter McDonald, Nashville, Tenn., is Ch. Engr.

Tenn., Dyersburg.—Illinois Central R. R. anticipates construction of a small yard at Dyersburg to cost about \$150,000, including shops. A. S. Baldwin, Chicago, Ill., is Ch. Engr.

Tenn., Nashville.—Louisville & Nashville R. R. has completed and just put in operation its new double-track line, the Lewisburg & Northern R. R., from Nashville south 73 mi.

Tenn., Nashville.—Date for construction bids on the proposed Tennessee & Kentucky Interurban Electric R. R. from Nashville, Tenn., to Adairville, Ky., about 44 mi., is not yet set. Route is via Goodlettsville, White House, Cross Plains, Orinda and Lamont. Three bridges of one span each would be required. J. P. Helms, 312½ 3d Ave. N. Nashville, is Prest. and Gen. Mgr.; A. G. Merritt, Jr., V.-P.; H. L. Sperry, Treas.; Paul D. Denton, Secy., others interested being Gen. J. L. Weakley, Clyde Shropshire, R. W. Bratton, J. W. Tilford, B. F. Cornelius, J. C. Collins and A. C. Ferris.

Tenn., Waynesboro.—Wayne county has voted \$150,000 of bonds to aid the proposed Nashville, Shiloh & Corinth R. R. Clopton Thomas, Corinth, Miss., is Secy.

Tex., Bartlett.—The Bartlett Western Ry. Co. is reported contemplating an issue of bonds for improvements. T. E. Fowler, Bartlett, is Chief Engr.

Tex., Brenham.—Frank Eberle, Secy. Young Men's Business Assn., and associates are planning construction of about 100 mi. of interurban railway out of Brenham to Independence and other points.

Tex., Dallas.—Southern Traction Co., J. F. Strickland, Prest., will build a connection between the Corsicana division and the Waco line division via Waxahatchie and Ferris, 15 mi. About four-fifths of the grading was done some time ago.

Tex., Lubbock.—Altus, Lubbock & Roswell R. R. Co. proposes to build extension from Wellington, Tex., to Roswell, N. M., 311 mi., via Memphis, Lake View, Silvertown, Lockney, Petersburg and Lubbock, including a steel bridge over Red River, and another over a canyon at Lubbock, besides several trestles. Route mostly level. E. C. Noble is Prest.; J. M. West, V.-P.; J. E. Fowler, Secy. and Treas., other directors being Carey Shaw and Ed Kennedy, all of Houston, Tex., and W. W. Wheelock and J. A. Slayton of Lubbock, Tex. Not yet decided when construction will begin.

Va., Clinch.—Sulphur Springs Lumber Co. has under construction about 7 mi. of tram road, but will finally have to build 12 mi. Address G. B. Bickley.

Va., Danville.—Southern Ry. has let contract to Robert Russell, Danville, to build double-track cut-off line between Danville and Dry Fork, Va., very nearly 13 mi. Will require double-track bridge over Dan River. W. H. Wells, Washington, D. C., is Ch. Engr. of Constr.

W. Va., Morgantown.—Kendall Lumber Co. of Pittsburgh, it is reported, will resume construction of the Cheat Haven & Bruce-ton R. R. Guy Hartley of Morgantown is Engr. The Gilmore-Weaver Construction Co., represented by I. N. Weaver, is the Contr.

STREET RAILWAYS

Fla., Miami.—At a city election a street-railway franchise was voted to Tatum Bros. of Miami. Construction is to begin immediately on about 2½ mi. of line. B. B. Tatum and J. H. Tatum are interested.

Ga., Albany.—An extension 1 mi. long is contemplated by the Albany Transit Co. J. W. McFarland is Gen. Mgr.

La., Alexandria.—Election is to be held Aug. 5 on franchise to the Southern Power & Traction Co. to build an extension of its street railway on 16th St. from Levin to Marye St., and on Marye St. thence to the city limits; also another franchise on 13th St. from De Soto to Magnolia St., and thence to Marye St. J. A. White and others are interested.

La., Shreveport.—Shreveport Traction Co. has bought two electric railway franchises, one to extend the present Fairfield line and the other to extend franchise for the existing track. W. F. Dillon is president.

N. C., Goldsboro.—The Goldsboro Street Ry. Co. will lay 1 mi. of new track, and tracks will also be laid into the car barn. Altogether \$10,000 will be spent for improvements. John L. Livers, Charlottesville, Va.,

is Prest., and Ernest L. Gentis, Goldsboro, N. C., is V.-P. and Gen. Mgr.

Tex., Dallas.—John T. Jones and associates have filed petitions for street-railway franchise on Parry Ave. between Kentucky St. and Henderson Ave. The line will cost about \$24,500.

Tex., El Paso.—El Paso Electric Ry. Co. is reported preparing plans for contemplated extensions. C. W. Kellogg is Mgr. and H. S. Potter Gen. Supt.

Tex., Texas City.—Franchise has been granted by the County Commrs. to the

Texas City Street Ry. Co. to build an extension. Thos. J. Davis is Prest.

Tex., Temple.—Southwestern Traction Co. will build extensions of its street railway in Temple. A. F. Bentley is Prest. and W. G. Haag Gen. Mgr.

Va., Richmond.—Concerning the late report that it had sold \$750,000 of bonds for improvements and extensions, the Virginia Ry. & Power Co. says that no extensions or improvements have been made since the last annual report was issued. Presumably the bonds are to cover work already completed. T. S. Wheelwright is Prest.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Aluminum Manufactures.—See Manufactured Products, S. Garcia Hermanos, Caracas, Venezuela.

Asphalt, Cement, etc.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 50,000 lbs. refined No. 1 Trinidad asphalt, 20,000 lbs. Val-de-Travers asphalt, 50,000 lbs. asphalt paving cement, schedule 7061; 60,000 lbs. fire-clay in cloth sacks, schedule 7063; 2000 gals. paint drier in 5-gal. cans, schedule 7069; delivery Norfolk; for schedules apply to navy pay office nearest navy-yard.

Balls and Bearings.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 4 to furnish 900 steel balls, ¾ in. diam., and 18 balls, schedule 7067; delivery Washington; for schedules apply navy pay office nearest navy-yard.

Boilers.—Engr. Depot, U. S. Army, Washington Barracks, D. C.—Bids until Aug. 6 to furnish two 12 H. P. return tubular boilers; information on application; Jos. E. Kuhn, Lieut.-Col., Engrs.

Boiler.—See Engine and Boiler, Frank Jones Co.

Brick.—Muller & Pollard, Fort Worth National Bank Bldg., Fort Worth, Tex.—Sample brick costing \$17.50 per thousand; vitrified gray brick preferred.

Brick, Cement, etc.—Wm. A. Bostick, 53 Orange St., St. Augustine, Fla.—Prices on large size common brick, lime, cement (stucco), white cement, Acme plaster and lumber for \$14,000 hotel.

Bridge Construction.—Committee on Public Works of Board of Bond Trustees, Geo. M. Powell, Chmn., Jacksonville, Fla.—Bids until Aug. 10 to furnish material and construct reinforced concrete bridge on Main St. over Hogans-Creek; plans and specifications on file with Commrs. of Public Works; proposal forms, plans and specifications obtainable from Chief Clerk, Engineer's Dept., Main and Orange Sts.

Bridge Construction.—G. Tayloe Gwathmey, Chmn. Com. of Roads and Bridges for Norfolk County, 722 Citizens' Bank Bldg., Portsmouth, Va.—Bids until July 28 to repair Larchmont Bridge No. 2 on Jamestown Blvd.; plans and specifications posted in front of Courthouse door of Circuit Court, or may be seen at office County Treas. or Mr. Gwathmey.

Bridge Construction.—Blount County Bridge Committee, J. L. Clark, Chmn., Maryville, Tenn.—Bids until July 25 at office Chmn. County Court to construct reinforced concrete arch bridge over Nine-Mile Creek a Howards' Mill; two 50-ft. spans; 100 ft. long, including abutments; 20 ft. high; 12-ft. clear roadway; each bidder to furnish with bid complete detailed plan of work proposed and specifications.

Bridge Construction.—Dallas County Commrs., Dallas, Tex.—Open bids Aug. 1 to construct one 100-ft. and one 126-ft. fixed-span bridges, and one 212-ft. swing bridge; plans and specifications office of J. F. Witt, County Engr., Dallas; approximate cost \$45,000.

Building Materials.—Jas. T. Cox, Watertown, Tenn.—Prices on building materials and water connections for 7-room dwelling.

Building Materials.—T. M. Talkington, Secy., Board of Education, Shirley, W. Va.—Prices on building materials for \$3000 school building.

Building Materials, etc.—Southern Ferro-Concrete Co., Trust Co. of Georgia Bldg., Atlanta, Ga.—Subbids on electric wiring, roofing and sheet metal, plastering, terra-cotta, mill work, tile, marble and terrazzo, ornamental iron work for \$80,000 hospital building.

Canal Construction.—Commrs. Columbus County Drainage Dist. No. 2, Frank P. Graves, Chmn., Bolton, N. C.—Bids until

Aug. 6 to construct drainage canals; specifications and proposal forms furnished on application and full set of maps, plans and profiles may be seen at office Clerk of Superior Court, Whiteville, N. C., or office of North Carolina Co., Bolton; complete sets of plans and profiles furnished for \$5 upon application to North Carolina Co.; length of canals, 45 mi.; excavation, 1,500,000 cu. yds.; W. Worth Bean, Jr., Supt. of Construction.

Canal (Drainage).—Board Drainage Commrs., Grant's Creek Drainage Dist., Rowan County, Salisbury, N. C.—Bids at courthouse until Aug. 3 to clear right of way and cut (about) 1½-mi.-long ditch along Grant's Creek; about 491,866 cu. yds. material; plans and specifications on file Clerk's office, Salisbury; C. M. Miller, Engr. and Supt., Salisbury.

Cars (Box).—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa.—Number of second-hand box cars; 30 tons capacity; steel center sills.

Cement.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of cement.

Chemicals.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of chemical products.

Chewing Gum Machinery.—E. Y. Sanders, care Hotel Zinzendorf, Winston-Salem, N. C.—Addresses of manufacturers of chewing gum machinery.

Coffee-Roasting Equipment.—Sucs. de Perez Hermanos S. en C., Apartado de Correo 540, San Juan, Porto Rico.—Correspondence (view to agency) with American manufacturers of coffee-roasting equipment.

Corn Mills, etc.—Bernardino Iracheta, Buenos Aires, General Paz, Argentina.—Correspondence (view to agency) with mfrs. of machines for decorticating grain (hand power preferred); also small machines for crushing corn for feed.

Culverts (Metal).—G. R. M., Box 460, Birmingham, Ala.—Data and prices on culvert pipes; about 500 ft. 18, 24, 30 and 36-in. required; cast-iron culverts preferred; give weight per ft.

Dam.—A. B. Dawson, City Clerk, Willis Point, Tex.—Bids until July 27 on earthwork for water-works as follows: Earthen dam, 30,000 yds.; embankment, spillway of 4000 yds., excavation; specifications and profiles on file with City Clerk and Cooke & Harrison, Engrs., 1008 Southwestern Life Bldg., Dallas.

Dam Construction.—Adair Drainage Dist., Wm. Motter, Chmn., Kirksville, Mo. Bids at office Thos. J. Dockery until Aug. 1 to construct 2 dams across Chariton River of sufficient height to run water through drainage ditch; for further information address Mr. Dockery, Kirksville, or Burr Eastin, Greentop, Mo.

Dredge-Boat Work, etc.—Harris County Drainage Dist. No. 3, J. H. Pickle, Secy., Board of Directors, Union City, Tenn.—Bids until Aug. 4 for about 446,700 cu. yds. ditch work with floating dredge and about 21,000 cu. yds. with teams; also for clearing 125 acres right of way; bids separately or as whole; W. C. Kelly, Engr., Union City.

Drill (Core).—Cheat River Coal Co., Albright, W. Va.—Core drill of 400 ft. capacity; new or second-hand; delivery by Aug. 1; give prices and details.

Drills.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 60 breast drills, schedule 7060; delivery Philadelphia; for schedules apply to navy pay office nearest navy-yard.

Drykilns.—Frank Jones Co., Oak Grove, La.—Quotations on good used drykiln equipment of 20,000 capacity, 50 H. P. engine and 125 H. P. return tubular boiler; quotations on engine and boiler complete with stack, front and grate bars.

Electric Fans.—Navy Dept., Bureau Sup-

plies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 15 A. C. single phase induction fans, 12 in., 110 volts, 60 cycles, schedule 7067; delivery Brooklyn; for schedules apply navy pay office nearest navy-yard.

Electric Motor.—Davis Milling Co., 1197 Water St., Norfolk, Va.—Electric motor; 3-phase; 60 cycles; 2200 or 230 volts; 50, 60 or 75 H. P.; any standard make; good condition.

Electric Plant.—I. V. Turner, Town Clerk, Winston, N. C.—Bids on electric light plant; population 1000; blueprint of town and specifications at Mayor's office.

Electric Repair Machinery.—See Tank (Dipping).

Electric Signals.—Treasury Dept., O. Wenderoth, Supvr. Archt., Washington, D. C.—Bids until Aug. 3 for electric signal system at New Orleans, La.; San Francisco, Cal., and Peoria, Ill.; specifications obtainable from above office or of Custodian at discretion of Supervising Archt.

Electrical Machinery.—F. S. Bishop, Treas.-Mgr., Kentucky Corrugated Paper Co., 117 N. 5th St., Louisville, Ky.—Will need generator and several motors.

Electrical Equipment.—Jas. T. Cox, Watertown, Tenn.—Prices on electrical equipment for 7-room dwelling.

Electrical Equipment.—W. T. Gates, Flemington, W. Va.—Prices on electric plant to operate moving-picture machine.

Elevator.—J. B. Rountree, Quitman, Ga. Prices on hand elevators for carrying buggies and wagons; platform, 13 ft. by 6 ft. 9 in.

Engine.—F. S. Bishop, Treas.-Mgr., Kentucky Corrugated Paper Co., 117 N. 5th St., Louisville, Ky.—Will need small steam engine.

Engine and Boiler.—Frank Jones Co., Oak Grove, La.—Prices on 50 H. P. engine and 125 H. P. return tubular boiler, complete with stack, front and grate bars.

Engineer (Road).—Rowan County Commrs., H. C. Trott, Chmn., Salisbury, N. C.—To retain experienced road engineer for permanent position.

Explosives.—See Manufactured Products, Bernardino Iracheta, Argentina.

Filter Construction.—J. G. Sutton, City Secy., Beaumont, Tex.—Bids until Aug. 4 to furnish material and improve filters of Beaumont water-works; bids for furnishing and erecting new manifold systems, strainers and air wash systems in six 500,000-gal. tub filters, gravity type; plans and specifications on file with City Secy., Beaumont, and Burns & McDonnell, Consult Engrs., 821-826 Scarritt Bldg., Kansas City, Mo.

Fire Doors.—Charleston Electric Supply Co., Charleston, W. Va.—Prices on fire doors.

Flour Mill Machinery.—Marshall Haney, Geer, Va.—Addresses of manufacturers of or dealers in machinery to equip small grist mill to make flour and feed; operated by power.

Food Supplies.—See Manufactured Products, S. Garcia Hermanos, Caracas, Venezuela.

Furniture.—Allen Parish Police Jury, Oberlin, La.—Bids until Aug. 6 for wood and metal furniture and fixtures for courthouse; plans, specifications and conditions for estimating obtainable from Favrot & Livaudais, Ltd., Archts., 605 Perrin Bldg., New Orleans, La.

Hardware.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of hardware.

Heating Plant, etc.—John H. Gose, City Clerk, Bristol, Va.—Bids until Aug. 3 for following work in grammar and high school building, Euclid Ave. and Piedmont St.: Heating and ventilating according to plans and specifications by Henry Adams, Consult. Engr., 1261-1269 Calvert Bldg., Baltimore, Md., which can be seen at office Clarence B. Kearfott, Archt., Bristol, Tenn., and obtained by depositing check for \$25. Plumbing in accordance with plans and specifications by Clarence B. Kearfott, Archt., Bristol, Tenn., which may be seen at office said architect, or obtained by deposit. Electric wiring and conduit work, in accordance with plans and specifications by Clarence B. Kearfott, Archt., Bristol, Tenn., which may be obtained by deposit of check for \$25. Bids to be submitted upon bidder's blanks provided by architect.

Heating, Plumbing and Electrical Work.—W. D. Coggeshall, Darlington, S. C.—Prices on heating, plumbing and electrical work for residence; plans and specifications at offices of Mr. Coggeshall and W. J. Wilkins & Co., Florence, S. C.

Heating Plant.—Jas. T. Cox, Watertown, Tenn.—Prices on hot-air furnace for 7-room dwelling.

Holst.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen.,

Washington, D. C.—Bids Aug. 11 to furnish and install 10-ton auxiliary hoist, schedule 7070; delivery Philadelphia; for schedules apply navy pay office nearest navy-yard.

Incinerators (Garbage).—G. R. M., Box 400, Birmingham, Ala.—Data, with prices, drawings, specifications, etc., on garbage incinerators for towns of 5000 to 10,000 population.

Iron.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of iron.

Laundry Supplies.—L. W. Holloman, Box 202, Edenton, N. C.—Correspondence with manufacturers of steam laundry supplies.

Leather.—Raacke & Co., Rua dos Ourives, 87, Rio de Janeiro, Brazil.—Interested in leather—box calf, colored and black; wants addresses of manufacturers.

Levee.—Board State Engrs., 213 New Orleans Court Bldg., New Orleans, La.—Bids until July 28 on following levee work: Bayou Lafourche dam, Ascension parish, enlargement, etc., 300 cu. yds. earthwork, 1600 sq. yds. reinforced concrete facing or paving; Carroll levee, St. John parish, raising and enlarging, contents 78,000 cu. yds.; Algiers to Venice, Plaquemine parish, 22,000 cu. yds. earthwork, 8000 ft. wooden revetment; all Mississippi River, right bank; Poydras levee, St. Bernard parish, Mississippi River, left bank, new levee, contents 80,000 cu. yds.; amounts approximate; further information office Board State Engrs., Frank M. Kerr, Chief.

Levee Construction.—Levee Commrs., Yazoo-Mississippi Delta Dist., T. G. Dabney, Ch. Engr., Clarksdale, Miss.—Bids until Aug. 3 for following levee enlargement: Sections 22-28, inclusive, Tunica county, containing 558,000 cu. yds.; sections 35-36, Tunica county, containing 229,500 cu. yds.; sections 55-63, except section 60, in Tunica and Coahoma counties, containing about 814,000 cu. yds.; bidders invited to examine right-of-way plats in office Levee Commrs.; further information furnished by T. G. Dabney, Ch. Engr.

Levee Construction.—Orleans Levee Dist., Leigh Carroll, Prest., 201 New Orleans Court Bldg., New Orleans, La.—Bids until July 28 to construct following levee work in 5th Dist., Orleans parish: Parish line to Canal St. ferry, enlargement, about 4000 lin. ft., contents 80,000 cu. yds.; Canal St. ferry to Algiers sawmill, enlargement, reinforced concrete facing or paving 4500 sq. yds., earth work 7000 cu. yds.; Beka New levee, about 10 mi. below Canal St. ferry, right bank Mississippi River, 4500 lin. ft. long, contents 110,000 cu. yds.

Lumber.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 2500 ft. No. 1 white cedar, 1½ in.; 10,000 ft. No. 1 white oak, water-seasoned; miscellaneous lot No. 3 long leaf yellow pine, schedule 7062; delivery Charleston, S. C.; 165,000 ft. No. 3 white pine barn boards, 1x12 in., schedule 7062; delivery Washington; for schedules apply to navy pay office nearest navy-yard.

Lumber.—Jackson Mfg. Co., Harrisburg, Pa.—Several cars maple, birch and beech lumber for wheelbarrow parts; air seasoned; sawed to specifications.

Mantles.—J. Robt. Martin, Broad and Main Sts., Greenville, S. C.—Catalogues and prices on mantles and fireplaces.

Manufactured Products.—Scens y Dolz, P. O. Box 253, La Paz, Bolivia.—Correspondence with manufacturers, view to (direct) representation in Chili, Peru and Bolivia. (Company is importer of glass, tableware, iron, machinery, preserved food, fish, meat, wine, liquors, etc.)

Manual Training Equipment.—Board of School Commrs., Charlotte, N. C.—Bids until Aug. 4 on complete equipment for installation of manual training in High School; specifications on application to A. H. Wearn (City Clerk), purchasing agent.

Manufactured Products.—S. Garcia Hermanos, Caracas, Venezuela.—Interested (view to representation) in drugs, cotton, wool and silk textures, lace, stockings, buttons, knives, scissors, glassware, hides, iron hardware, passementerie, preserves, canned food, petroleum, paper, manufactures of aluminum, leather, shoemaking supplies, etc.; handles (wholesale) food supplies and manufactures soda, and is especially interested in these lines.

Manufactured Products.—Bernardino Iracheta, Buenos Aires, General Paz, Argentina.—Correspondence (view to agency) with mfrs. of shoes and supplies, dry goods, clothes for men and women, furniture and explosives for wells.

Manufactured Products.—G. Macrides, Samsoun, Black Sea, Russia.—Correspondence with American mfrs. with view to representation in vicinity of Black Sea.

Mechanical Equipment.—Wm. Walker Jones, 510 Tucker Bldg., Raleigh, N. C.—To correspond relative to representing manufacturers of products appropriate for sale in connection with wood and iron-working machinery, boilers, engines, logging cars, car wheel presses, railway and mill supplies, etc.

Medical Supplies.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of medical supplies of all kinds.

Meters (Water).—City of Bainbridge, Ga., John W. Callahan, Mayor.—Bids within next 30 days for water meters to be installed by Jan. 1; meters to be tested by Water-works Supt.

Milling Machine.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish heavy universal milling machine, capacity 35x12x22 in., schedule 7071; delivery Portsmouth, N. H.; for schedules apply navy pay office nearest navy-yard.

Ornamental Iron.—See Building Materials, etc.

Paper (Emery and Sand).—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of sand and emery paper.

Paper.—Raacke & Co., Rua dos Ourives, 87, Rio de Janeiro, Brazil.—Interested in paper—packing, wrapping, letter, silk, etc.; wants addresses and manufacturers.

Paper (Wrapping).—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of wrapping paper.

Paving.—Mayor and Board of Aldermen, Sison, Miss.—Bids until Aug. 4 to build concrete sidewalks; plans and specifications on file with Clerk of Mayor and Board of Aldermen; Berry D. Brown and R. H. Swamy, Street Commrs.

Paving.—Board of Commrs., J. W. Dashiell, Secy., Nashville, Tenn.—Bids until July 21 to construct concrete curbing and sidewalks on 21st Ave., West End to Blakemore Ave.; plans and specifications on file with City Engr.; H. W. Howse, Mayor.

Paving.—F. J. Von Zuben, City Engr., Fort Worth, Tex.—Bids until July 28 to pave with 3-in. vertical fiber brick Jennings Ave. from 10th St. to Jennings Ave. viaduct, and to construct concrete gutters 12 in. wide; proposal forms and specifications on file with City Engr.; M. P. Harwood, City Secy.

Paving.—J. E. McKenzie, Town Clerk, Panama City, Fla.—Bids until July 27 to build 2000 ft. cement sidewalk and to grade 1 mi. of street; plans and specifications on file with Town Clerk.

Paving.—Commrs. of Public Works, D. B. McKay, Chrmn., Tampa, Fla.—Bids until July 21 to pave Fortune St. from Franklin St. to Hillsborough River; work consists of taking up and relaying old pavement and grouting joints with asphalt filler; 4500 sq. yds.; specifications obtainable from City Engr.

Paving.—City of Grenada, Miss.—Bids at office of L. B. James, City Recorder, until Aug. 3 for following approximate items: 14,000 sq. yds. street paving with vitrified brick, wood block, concrete and bitulithic; 4000 lin. ft. concrete curb; grading, water and sewer connections; blanks, specifications, etc., obtainable from City Recorder.

Paving, etc.—City of Miami, Fla.—Bids about Aug. 6 to pave certain streets with necessary drainage; vitrified pipe and reinforced concrete sewers; bids asked on asphaltic concrete, vitrified brick, bitulithic, creosoted wood blocks and asphalt block; approximate yardage, 95,000; plans and specifications ready about July 25; B. H. Klyce, Engr., Miami.

Paving, etc.—City of Mooresville, N. C.—Bids until Aug. 24 to construct 9000 yds. bituminous paving, concrete base and curb; plans and specifications on application to Adlai Osborne, Engr., 414 Realty Bldg., Charlotte, N. C.

Piping.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 2400 ft. wrought-galvanized pipe, 2½ in., schedule 7061; delivery Charleston, S. C.; for schedules apply to navy pay office nearest navy-yard.

Piping.—Commrs. Dist. of Columbia, 509 Dist. Bldg., Washington, D. C.—Bids until Aug. 5 to furnish 81½ net tons 16-in. cast-iron water pipe and 52½ net tons cast-iron water pipe specials; for use in Water Dept.; specifications and proposal form obtainable from Purchasing Officer, D. C., 330 Dist. Bldg.

Piping.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to

agency) with manufacturers of piping for water service.

Posts.—Chamber of Commerce, Gainesville, Tex.—Addresses of manufacturers of posts to be placed at intersections of streets bearing street name.

Plans.—Jas. T. Cox, Watertown, Tenn.—Wants plans for 7-room dwelling.

Racks (Extension, Cabinet).—Sloan Clothing Co., Statesville, N. C.—Extension racks for clothing cabinets.

Retaining Wall.—Talbot County Commissioners, J. B. Harrington, Clerk, Easton, Md.—Bids until July 28 to construct retaining wall, distance 366 ft., along Miles River at Easton approach to Miles River bridge; blank proposal forms on application to State Roads Com., 601 Garrett Bldg., Baltimore, Md.; Frank W. Seth, County Roads Engr., Easton, Md.

Riprap and Soil.—U. S. Engr. Office, Galveston, Tex.—Bids until Aug. 15 to place riprap and soil with sod at Federal Quarantine Station, Galveston; information on application; C. S. Riche, Lieut.-Col., Engrs.

Road Construction.—Allegheny County Road Directors, J. T. Edwards, Prest., Cumberland, Md.—Bids until Aug. 5 to improve following section Legislative Rd.: Ocean-Midland section, 1 mi.; Pekin-Barton section, 2 mi.; Barton-Phoenix section, 2 mi.; bids on both concrete and macadam roadway; plans, specifications and bidding sheet on deposit of \$2 at office State Roads Com., Garrett Bldg., Baltimore.

Road Construction.—Board of Jones County Commrs., Dist. No. 2, T. G. McCallum, Chrmn., Laurel, Miss.—Bids until Aug. 3 to construct 14 mi. streets and roads; plans and specifications at office of Chancery Clerk, Laurel; F. T. Myers, Engr.

Road Construction.—Bibb County Commissioners, Centerville, Ala.—Bids until Aug. 19 to grade, drain and surface with chert portion of Centerville and Blocton Rd., beginning at end of present State Aid Rd.; expenditure \$10,542.26; W. S. Keller, State Highway Engr., Montgomery.

Sewer Construction.—Commrs. of Sewerage, P. D. Crawford, Chrmn., Oakdale, P. O. at Louisville, Ky.—Bids until July 24 at South Louisville Savings & Deposit Bank to construct sewers in Oakdale; drawings and specifications on file at South Louisville Savings & Deposit Bank; copies of plans and specifications may be obtained from First Asst. Engr., Board of Public Works, Louisville.

Road Construction.—Commrs.' Court, Bell County Road Dist. No. 7, Belton, Tex.—Bids Aug. 3 to construct about 40 mi. gravel road; 7 subdivisions of about 6 mi. each; bids received on subdivisions or whole; bonds \$105,000; Engrs., See & Smith, 211 Temple State Bank Bldg., Temple, Tex.

Road Construction.—Greene County Commrs., Eutaw, Ala.—Bids until Aug. 17 to grade, drain and surface with chert part of Eutaw and Clinton Rd., beginning at Eutaw; expenditure \$7000; W. S. Keller, State Highway Engr., Montgomery.

Road Construction.—Hancock County Court, Armour S. Cooper, Clerk, New Cumberland, W. Va.—Bids until July 28 to grade and pave roads; plans and specifications on file with Clerk County Court.

Road Construction.—Highway Commissioners, Supvrs.' Dist. Nos. 1 and 3, Forrest County, J. K. Denham, Secy., Hattiesburg, Miss.—Bids until Aug. 4 to grade, bridge and surface River Ave., Indian Springs and Corinth Rds.; about 5½ mi.; plans and specifications on file with Herbert Gillis, Chancery Clerk.

Road Construction.—Howell Johnson, County Judge, Fort Stockton, Tex.—Bids until Aug. 13 to improve 250 mi. road in Pecos county; separate bids for concrete work; plans, specifications, etc., on file with County Clerk, or can be obtained from Whiteaker & Washington, Engrs., Fort Stockton, on deposit of \$10.

Road Construction.—Louisiana County Commrs., Louisa, Va.—Bids at Clerk's office until July 25 to construct 4 mi. soil road between Buckner's and Jackson; plans and specifications on file with Clerk at Louisa and G. P. Coleman, State Highway Commr., Richmond.

Road Construction.—Mercer County Commrs., Princeton, W. Va.—Bids until July 30 for grading, masonry (except substructure of steel bridges) and macadam complete on following roads: Virginia-West Virginia State line, near Pocahontas, to Coopers, about 2½ mi.; Bramwell to Rock, 8 mi.; Bramwell to Bluefield, 8 mi.; Princeton to Athens, 6½ mi.; Carr Schoolhouse to mouth of Sand Lick, 7 mi.; W. I. Lee, Ch. Engr., macadam road construction, Princeton.

Road Construction.—Maryland State Roads Com., O. Weller, Chrmn., 601 Garrett Bldg., Baltimore, Md.—Bids until Aug. 4 to build 10 sections State highway in following counties: Allegany, from near Cumberland to Nave's Farm Rd., 1.74 mi. (resurfacing); Baltimore city, Cathedral and Liberty Sts., from near Monument to Baltimore Sts., .54 mi. (sheet asphalt and granite block); Dorchester, Cambridge to Church Creek Rd., 5.85 mi. (macadam or concrete); Frederick, road through Middletown, 1.36 mi. (macadam or concrete); Prince George's, Meadows to Camp Springs, 3.03 mi. (macadam, concrete or gravel); St. Mary's, St. Mary's City to Ridge, 6.74 mi. (gravel surfacing); Leonardtown to Great Mills, 10 mi. (gravel surfacing); Somerset, Carroll's Corner to Marion, 5.32 mi. (macadam or concrete); Washington county, Licking Creek to Millstone, 4.1 mi. (macadam or concrete); Millstone to Hancock, 3.5 mi. (macadam or concrete); specifications on application and cash payment of \$1 for each contract.

Road Construction.—P. H. Mashburn, Chrmn. Old Fort Township Highway Com., Old Fort, N. C.—Bids until July 25 to improve Central Highway from Greenlee to Old Henry, 9½ mi.; work consists principally of grading and surfacing with gravel and constructing pipe and concrete culverts; 71,000 cu. yds. excavation and 12,000 cu. yds. gravel; plans, specifications and proposal forms on file with Mr. Mashburn and complete sets may be obtained by depositing \$5.

Road Construction.—Perry County Commrs., Marion, Ala.—Bids until Aug. 18 to grade, drain and surface with gravel part of Burrough's Ferry Rd., beginning at city limits of Marion; expenditure \$6542.26; W. S. Keller, State Highway Engr., Montgomery.

Road Construction.—Russell County Commrs., Lebanon, Va.—Bids at Clerk's office until Aug. 4 to macadamize 3½ mi. roads, already graded, from Castlewood toward Dante; plans and specifications on file with Clerk at Lebanon, A. H. Pettigrew, Bristol, and G. P. Coleman, State Highway Commr., Richmond; specifications obtainable from G. P. Coleman.

Road Construction.—St. Lucie County Commrs., J. E. Fultz, Clerk, Fort Pierce, Fla.—Bids until Aug. 4 to hard surface with marl road from Fellsmere 1½ mi. north; also to hard surface with marl about 4 mi. on Sebastian and Fellsmere Rd. as designated by County Engr.; for plans and specifications, etc., apply to Miller Hallows, Walton, Fla.

Road Construction.—Volusia County Commrs., DeLand, Fla.—Bids at office Clerk of Circuit Court until Aug. 3 to construct about 6 mi. hard-surfaced road from near DeLand to DeLeon Springs; grading as per specifications of Engr., A. B. Dunning, DeLand; material to be DeLeon shell (or like quality), laid 9 ft. wide, 9 in. deep and rolled with not less than 5-ton roller; plans, profiles, etc., obtainable from Saml. D. Jordan, Clerk; road is in three sections; bids received for one or more sections; contracts let for grading and hard-surfacing together or separately.

Roofing.—See Building Materials, etc.

Salt Mill.—Succs. de Perez Hermanos S. en C. Apartado de Coreo 540, San Juan, Porto Rico.—Correspondence (view to agency) with American manufacturers of mills operated by electricity for grinding salt.

Sawmill.—G. W. & C. M. Wall, Wallburg, N. C.—Band sawmill; to carry about 14-in. saw.

Seating.—W. T. Gates, Flemington, W. Va.—Prices on seating for moving-picture theater.

Sewer Construction.—Baltimore (Md.) Board of Awards.—Bids until July 29 to construct lateral sewers and house connections in Dist. No. 43-B, sanitary contract No. 137; 57,000 lin. ft. vitrified pipe sewer, 8 to 18-in. diam., and 47,000 lin. ft. vitrified pipe house connections; specifications and plans obtainable from Sewerage Com., Ira Remsen, Chrmn., 901 American Bldg.; charge of \$10 for each set of specifications and blueprints.

Sewer Construction.—Commrs. Sewer Dist. No. 79, W. C. McGinley, Chrmn., Little Rock, Ark.—Bids until July 27 to construct about 3200 lin. ft. 6-in. sanitary sewer with necessary appurtenances; plans and specifications on file with Ford & MacCrea, Engrs., Little Rock.

Sewer Construction.—D. W. Joslyn, Mayor, Charleston, Mo.—Bids until Aug. 6 to construct sewer system and sewage-disposal works; 6 mi. 8 to 12-in. pipe, 53 manholes, 32 flush tanks, Imhoff tank filter beds, sludge bed, sewage pumping equip-

ment and force mains; plans and specifications on file with Roy Strickland, City Clerk, and may be obtained from Frank L. Wilcox, Engr., Syndicate Trust Bldg., St. Louis, upon deposit of \$25.

Sewer Construction.—W. H. Yousse, City Clerk, Hannibal, Mo.—Bids until Aug. 3 to construct sewer in Sewer Dist. No. 300; 31,470 lin. ft. 6-in. sewer, 600 lin. ft. 12-in. sewer, 800 lin. ft. 6x6-ft. concrete sewer, 2000 lin. ft. 4x6-ft. concrete sewer, 700 lin. ft. 3x4-ft. concrete sewer, 24 manholes and 15 lampholes; plans and specifications on file with City Clerk; copies furnished on receipt of \$5; B. F. Smiley, City Engr.

Sewer Construction.—W. O. Ward, Clerk, City Hall, Anniston, Ala.—Bids until July 23 to construct certain sewers; plans, specifications, details, etc., on file with City Clerk.

Sewing Machines.—Bernardino Iracheta, Buenos Aires, General Paz, Argentina.—Correspondence (view to agency) with mfrs. of sewing machines.

Sheet Metal.—See Building Materials, etc.

Soap (Liquid).—Germo Mfg. Co., 116 N. Commercial St., St. Louis, Mo.—Addresses of (large) manufacturers of liquid soap.

Spreaders (Earth).—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa.—Second-hand standard-gauge dirt spreader or bank widener.

Steam Shovel.—J. R. Cohn Rail & Supply Co., 303 Scanlan Bldg., Houston, Tex.—Serviceable second-hand steam shovel for Louisiana delivery; quick shipment.

Tank (Dipping), etc.—Charleston Electric Supply Co., Charleston, W. Va.—Prices on dipping tank and oven.

Terra Cotta.—See Building Materials, etc.

Textiles.—See Manufactured Products, S. Garcia Hermanos, Caracas, Venezuela.

Tile (Flooring).—J. Robt. Martin, Broad and Main Sts., Greenville, S. C.—Catalogues and prices on tile for floors.

Theater Equipment.—W. T. Gates, Flemington, W. Va.—Prices on equipment for moving-picture theater.

Tools (Carpenters').—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of carpenters' tools.

Towels.—Garcia & Rodriguez, Box 755, Havana, Cuba.—Correspondence (view to agency) with manufacturers of towels.

Truck (Gasoline).—Colquitt County Commrs., A. Huber, Chrmn., Moultrie, Ga.—5 to 6-ton gasoline truck, body capacity for carrying 25 men; to be used for scarifying roads, and, at same time, pull road machine with 18-in. blade 12 ft. long.

Water-works.—D. W. Joslyn, Mayor, Charleston, Mo.—Bids until Aug. 6 to construct water-works; 6 mi. 4 to 8-in. cast-iron pipe, 60 hydrants, 43 valves with boxes and pumping station with oil-driven triplex pumps; plans and specifications on file with Roy Strickland, City Clerk, and may be obtained from Frank L. Wilcox, Engr., Syndicate Trust Bldg., St. Louis, upon deposit of \$15.

Whiting and Wire.—Navy Dept., Bureau Supplies and Accounts, T. J. Cowie, Paymaster-Gen., Washington, D. C.—Bids Aug. 11 to furnish 15,000 lbs. whiting in 100-lb. boxes, schedule 7059; delivery Norfolk; 5000 lbs. galvanized plow steel wire, 0.066 in. diam., schedule 7060; delivery Boston; for schedules apply to navy pay office nearest navy-yard.

Woodworking Machinery.—Builders' Lumber & Supply Co., H. B. Miller, Gen. Mgr., 1040 Pennsylvania Ave., Charleston, W. Va.—Now receiving bids on sander, 14-in. moulder, end matcher, dado and pocket machines.

Woodworking (Sawing, Splitting, etc.) Machinery.—Gehres & Schmidt, Karlsruhe 1 B., Germany.—Addresses of mfrs. of machinery for sawing and splitting wood and for preparing wood for use as insulator.

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Fort Payne.—A new national bank is to be organized with H. B. Brock, Prest., and T. J. Cook, Cash. Business to begin by Oct. 1.

Ala., Tuskegee.—Farmers' State Bank is organized by F. L. Wadsworth and others. Fla., Pensacola.—Banking, Savings & Trust

[For Additional Financial News, See Pages 62 and 63.]

Merchants-Mechanics National Bank
 South and Water Sts. BALTIMORE, MD.
 DOUGLAS H. THOMAS President.
 JNO. B. RAMSAY V. P. and Chm. Bd. of Dir.
 WM. INGLE Vice-President.
 JOHN B. H. DUNN Cashier.
 Capital \$2,000,000 Deposits \$21,670,000
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 Accounts of Banks, Bankers, Corporations and Individuals solicited.
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The National Exchange Bank
 OF BALTIMORE, MD.
 Hopkins Place, German and Liberty Streets
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 August 9th, 1913, Surplus and Profits, \$764,031.00
 OFFICERS
 WALDO NEWCOMER, President.
 SUMMERFIELD BALDWIN, Vice-Pres.
 R. VINTON LANSDALE, Cashier.
 C. G. MORGAN, Asst. Cashier.
 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals invited.

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 J. ERNEST SMITH, President and Gen. Counsel.
 WM. G. TAYLOR, Vice-Pres. and Treasurer.
 HARRY W. DAVIS, Vice-Pres. and Secretary
 W. W. PUSEY, 2nd, Title and Real Estate Officer

FIRST NATIONAL BANK
 RICHMOND, VIRGINIA
 Capital and Surplus, - - - \$3,000,000
 JNO. B. PURCELL, President
 JNO. M. MILLER, Jr., Vice-Pres.
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 A general banking business transacted
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Bookkeeping Work per Bookkeeper-Hour

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 State, City and Corporation Securities Purchased Direct or from Holders.
 Temporary Loans Arranged on Such Collateral.
 Deposits, Dec. 31, 1912.....\$ 9,132,372.15 Increase, \$1,970,862.54
 Dec. 31, 1913.....11,103,234.69
 WE PAY 3% INTEREST SUBJECT TO CHECK
 Largest Capital and Surplus of any financial institution in Maryland or south of Washington, D. C.
MERCANTILE TRUST & DEPOSIT CO.
 OF BALTIMORE
 A. H. S. POST, - - - President
 FRED G. BOYCE, Vice-President WILTON SNOWDEN, Vice-President
 JOHN McHENRY, Treasurer J. R. WALKER, "

Co. has begun business at Palafox and Garden Sts.; capital \$100,000; F. C. Chaffin, Pres.; Oliver Jernagan, Jr., V.-P.; J. D. C. Newton, Cash.

Ga., Athens.—The Citizens' Bank & Trust Co. gives notice that it will amend its charter, changing name to Commercial Bank of Athens. Andrews C. Erwin is Pres.

Ga., Cedartown.—Title Abstract & Re-Writer Co. has made application for charter; capital \$25,000; D. L. Roberts and associates, organizers.

Ga., Hazlehurst.—Merchants and Planters' Bank of Hazlehurst has organized with \$25,000 capital; directors, J. M. Hinson, John F. Hall, Henry Cook, G. L. Hinson, John T. Rogers, Jr., H. C. Girtman, H. E. Mims, J. T. Sellers and Dr. J. D. Cobb. T. R. Knight is Cash.

Ga., Leesburg.—Bank of Leesburg is organized with the following directors: W. C. Laramore, Sr., H. A. Harris, R. L. Heath, T. H. Clark, H. B. Stovall, B. E. Fouché, J. A. Lipsey, L. O. Benton and S. J. Yeoman.

Ga., Macon.—Georgia Farm Loan Association is organized with J. T. Holleman Pres., O. A. Coleman V.-P., Benjamin J. Dasher, Secy.-Treas.

Ky., Louisville.—Falls City Loan Co., capital \$25,000, is inceptd. by Frank S. Morgan, Louisville; F. R. Hubachek, Minneapolis, Minn., and Fred Huettman, Chicago.

Miss., Biloxi.—First National Bank of Biloxi, which is a conversion of the Bank of Biloxi, has begun business; capital \$100,000; W. K. M. Duke, Pres.; Wm. Gorenflo, V.-P.; H. M. Folkes, 2d V.-P.; E. C. Tonsmeire, Cash.; B. A. Bond, Asst. Cash.

Miss., Collins.—Covington County Bank has organized with \$15,000 capital by A. G. Holcomb, H. A. Davis and others.

N. C., Charlotte.—Citizens' Savings & Loan Corporation, capital \$100,000, is organized with the following directors: J. O. Gardner, Pres.; J. W. Zimmerman, V.-P.; J. H. Fore, Secy.; J. T. Porter, Trans. and Mgr.; C. B. Bryant, J. H. McCausland, R. W. Miller, W. C. Dowd, C. W. Parker, J. F. Yorke and J. R. Bartol.

N. C., Lucama.—E. J. Barnes of Wilson is organizing a bank with \$12,000 capital.

N. C., Smithfield.—Johnson County Bank & Trust Co. is chartered; capital \$50,000. W. M. Sanders is one of the promoters.

Okla., Hooker.—First National Bank of Hooker is organized with \$25,000 capital; L. G. Blackmer, Pres.; C. E. Wilson, Cash.

Okla., Inola.—First State Bank is chartered; capital \$15,000. Inceptrs.: D. Koenig, Inola; T. C. Harrill, Lee A. Daugherty, Wagoner.

S. C., Columbia.—Carolina Casualty Agency is inceptd. to do a general insurance and brokerage business; capital \$250,000, with \$200,000 paid up; organizers, F. B. Curry, W. M. Goodeau and W. B. Brown of Monroe, N. C.

Tenn., Knoxville.—Fidelity Trust Co. has made application for charter; capital \$100,000; incorporators, J. Allen Smith, M. D. Arnold, Ben A. Morton, John W. Green, Wm. S. Shields and Frank M. Haynes.

Tenn., Erwin.—Erwin National Bank is chartered; capital \$25,000. This is a conversion of the Bank of Erwin. N. T. Turner is Pres.; J. W. Allison, Cash.

W. Va., Bluefield.—Mutual Savings & Loan Co. has begun business; Bernard McLaugherty, Pres.; H. A. Lilly, V.-P.; Harry C. Weller, V.-P.; W. L. Mustrat, Secy. and Treas.

W. Va., Clarksburg.—Clarksburg Trust Co. chartered; capital \$400,000; incorporators, W. T. Booth, Ross F. Stout, J. W. Agnew, C. W. Leggett and A. L. Law. Business is to begin about Sept. 1.

NEW SECURITIES

Ala., Birmingham.—Election is to be called to vote on \$5,000,000 water-works plant bonds. Address The Mayor.

Ala., Carrollton.—Election is to be held Aug. 24 to vote on \$1600 school-improvement bonds. Address The Mayor.

Ala., Florence.—Election was held July 22 to vote on \$30,000 5 per cent. 20-year school bonds. Address The Mayor.

Ala., Hayneville.—\$153,000 5 per cent. 20-year Lowndes county road bonds have been purchased by Steiner Bros. of Birmingham.

Ala., Huntsville.—Election will probably be called to vote on \$30,000 high-school bonds. Address The Mayor.

Ala., Jasper.—\$250,000 Walker county road bonds are voted. Address County Commrs.

Ala., Montevallo.—Bids will be received until July 31 for \$10,000 6 per cent. 10-year

bonds; dated July 2, 1914; maturity July 2, 1924; denomination \$500. J. M. Reynolds is Mayor.

Ala., Tuskegee.—Aug. 24 election is to be held to vote on \$15,000 5 per cent. 20-year street-improvement bonds. E. W. Thompson is Mayor.

Ark., Paragould.—Bids will be opened July 29 for \$28,000 water-works construction bonds. Address The Mayor.

Ark., Siloam Springs.—An improvement district has been organized and a petition circulated calling for bonds to construct sewer system to cost about \$50,000. Address The Mayor.

Fla., Arcadia.—Bids will be opened Aug. 15 by J. O. Bickley, Supt. Board of Education, for \$65,000 of an authorized issue of \$75,000 5 per cent. 30-year school bonds. Denomination \$1000. Dated May, 1914.

Fla., Arcadia.—Election will probably be held in October to vote on \$350,000 DeSoto county road and bridge bonds. Address County Commrs.

Fla., Bronson.—\$15,000 6 per cent. 10-year Special Tax School Dist. bonds were voted July 7. Denomination \$500. Dated Jan. 1, 1915. Thos. W. Price is Supt. Board of Public Instruction, Levy county.

Fla., Dade City.—Bids are being received for \$20,000 water-works and \$6500 sewer 5 per cent. 30-year bonds. Address The Mayor.

Fla., Fort Meade.—Election will probably soon be held to vote on \$7500 water-works and sewerage, \$7000 city hall, \$25,000 street and \$35,500 light bonds. Address The Mayor.

Fla., Green Cove Springs.—Bids will be received until Aug. 3 by M. W. Griffin, Clerk, Circuit Court, for \$150,000 5 1/2 per cent. 40-year road and bridge bonds Dist. No. 1. Further particulars will be found in the advertising columns.

Fla., Jacksonville.—The \$1,000,000 Duval county bonds to be voted on Aug. 4 are 30-year 5 per cents. J. H. Patterson is Chrmn. and Frank Brown Clerk Board of County Commrs.

Fla., Lake Helen.—\$15,000 school district building bonds are voted. Address Board of Education.

Ga., Macon.—Election is to be held in Bibb county Aug. 19 to vote on \$1,000,000 school, bridge, road, courthouse and hospital bonds.

Fla., Ocala.—Election is to be held in Sept. to vote on \$75,000 electric-plant bonds. Address The Mayor.

Fla., Tampa.—Bids will be received until Sept. 3 by Commrs. Hillsboro county for \$500,000 5 per cent. 30-year road bonds, being balance of a \$1,000,000 issue.

Fla., Winter Haven.—Election is to be held in Winter Haven special tax school district to vote on \$40,000 school bonds. Address County School Board, Bartow, Fla.

Ga., Lithonia.—Election is to be held Aug. 15 to vote on \$25,000 5 per cent. 30-year water and sewer bonds. A. J. McGahee is Mayor, and M. M. Marbut, City Clerk.

Ga., Savannah.—\$200,000 auditorium bonds have been declared valid by the Supreme Court. Address The Mayor.

Ga., West Point.—\$10,000 auditorium bonds are voted. Address The Mayor.

Ky., Hickman.—\$3000 6 per cent. 10-year school district bonds are voted. Address Board of Education.

La., Baskin.—Election is to be held Aug. 18 to vote on \$16,000 school bonds. Address Franklin Parish School Board at Winnboro, La.

La., Crowley.—Election is to be held Aug. 16 to vote on \$16,000 school-building bonds. Address Franklin Parish School Board, at Winnboro.

La., Donaldsonville.—\$35,000 bonds First Road Dist., Ascension parish, were purchased by Calcasieu Trust and Savings Bank of Lake Charles at par and interest.

La., Hahnville.—Third Road Dist., St. Charles parish, has voted bonds. Address Police Jury.

La., New Orleans.—At the November election \$2,000,000 5 per cent. 40-year bonds are to be voted on. Address Board of Education.

La., Shreveport.—Election will probably be held Aug. 25 to vote on \$1,200,000 water-works and sewerage bonds. Address The Mayor.

La., Shreveport.—Election is to be held Aug. 20 to vote on \$1,200,000 4 1/2 per cent. 1-40-year water and sewer bonds; denomination \$1000; dated July 1, 1914. J. H. Eastham is Mayor.

La., Winnboro.—Franklin Parish School Board has authorized the sale of \$19,000 certificates of indebtedness at par to Hoehler, Cumming & Prudden, Chicago.

Md., Annapolis.—The following Maryland bonds, consisting of \$3,000,000 4 per cent. State road loan of 1914 and \$500,000 4 per cent. State omnibus loan of 1914, were purchased at 99.258 by a syndicate composed of Kean, Taylor & Co., A. B. Leach & Co. and the Equitable Trust Co., all of New York.

Md., Cambridge.—\$21,000 of an authorized issue of \$30,000 5 per cent. Dorchester county bonds have been purchased by Nelson Cook & Co., Townsend Scott & Son and Baker, Watts & Co., Baltimore, at \$21,554.28; denomination \$500; dated July 1, 1912; maturity, \$1500 Jan. 1 of each and every year. Isaac O. Taylor is Pres. Board of County Commrs.

Md., Cumberland.—\$150,000 4 1/2 per cent. street-paving bonds are voted. A. W. Straub is City Clerk.

Md., Frederick.—Steps are being taken to hold an election to vote on \$100,000 street-improvement bonds. Address The Mayor.

Md., Rising Sun.—Election is to be held Aug. 3 to vote on light and water bonds. Address The Mayor.

Miss., Clarksdale.—Bids will be received until 3 P. M. Aug. 3 for \$1,000,000 5 per cent. 40-year bonds. Address Board of Levee Commrs. for Yazoo-Mississippi Delta, J. W. Cutrer, Pres., Clarksdale.

Miss., Corinth.—Bids will be received until 2 P. M. Aug. 3 by T. H. Johnston, Atty. of Alcorn County, for \$14,800 6 per cent. 1-20-year drainage bonds.

Miss., Grenada.—Bids will be received until 8 P. M. Aug. 3 for \$25,000 5 per cent. 20-year bonds. L. B. James is City Recorder. Further particulars will be found in the advertising columns.

Miss., Greenville.—\$65,000 5 per cent. school bonds were purchased on July 7 by Weil, Roth & Co., Cincinnati, at 101.28, accrued interest and blank bonds, and not by Jno. E. Sutherland, as recently stated. \$50,000 refunding bonds were purchased on July 8 at par by John E. Sutherland, Rialto Bldg., Kansas City, Mo. The refunding bonds have no connection in any way with the sale of the \$65,000 school bonds.

Miss., Gulfport.—Bids will be received until Aug. 3 for \$15,000 6 per cent. bonds City Rural Separate School Dist., Harrison county. Jno. J. Murphy is Clerk, R. F. D. No. 1, Gulfport. Further particulars will be found in the advertising columns.

Miss., Gulfport.—Jackson-Harrison Counties Consolidated School Dist. proposes to issue \$4300 of bonds. Address Board of Trustees.

Miss., Hazlehurst.—Board of Supervisors Copiah County proposes to issue \$5000 bonds for Gallman School Dist.

Miss., Hattiesburg.—Board of Supvrs. Forrest County, Herbert Gillis, Clerk, proposes to issue \$5000 Helena Consolidated School Dist. and \$10,000 McLaurin Consolidated School Dist. 5 per cent. 20-year bonds; denomination \$500.

Miss., Houston.—Bids will be received by H. E. Brannon, Chancery Clerk Chickasaw County, until noon Aug. 3 for \$100,000 20-year bridge bonds; interest 5, 5 1/2 and 6 per cent.; denomination \$500.

Miss., Indianaola.—Bids will be received until 2 P. M. Aug. 3 by A. P. Stubblefield, County Clerk, for \$5000 6 per cent. 10-25-year bonds Road Dist. No. 1, Sunflower county; denomination \$500.

Miss., Louisville.—Board of Supervisors, Winston county, announces intention to issue at August meeting \$50,000 road bonds for Dist. No. 1 and \$50,000 for Dist. No. 5. Address Chancery Clerk.

Miss., Waynesboro.—Bids will be received until 2 P. M. Aug. 4 for \$12,000 6 per cent. 10-20-year bonds Waynesboro Separate School Dist. Address W. S. Davis, City Clerk.

Mo., Cameron.—Recent school bond election has been declared illegal and another election is to be called. W. G. Stone is Pres. Board of Education.

Mo., Alton.—An election will probably be held to vote on \$160,000 city hall bonds. Address The Mayor.

Mo., Cassville.—\$6000 water-works improvement bonds defeated. J. S. Plattenburg is Mayor.

Mo., Joplin.—Election is to be held Aug. 4 to vote on \$15,000 Fire Department bonds. Address The Mayor.

Mo., Neosho.—\$40,000 water-works bonds are voted. Address The Mayor.

Mo., Osceola.—Election is to be held in November to vote on \$14,000 St. Clair county road-improvement bonds. Address County Commrs.

Mo., Palmyra.—Bids will be received until

4 P. M. July 30 for \$26,000 5 per cent. 5-20-year light and water bonds; denomination \$500; dated Aug. 1, 1914. Address J. M. Sosey, City Clerk.

Mo., Springfield.—\$2000 building bonds Greene County Consolidated High School Dist. No. 2 are voted. Address Board of Trustees.

N. C., Cherryville.—\$20,000 5 per cent. 30-year school bonds have been purchased by Sidney Spitzer & Co., Toledo, O.; denomination \$1000. J. B. Houser is Mayor.

N. C., Clinton.—Newton Grove and Westbrook townships, Sampson county, have voted railroad-aid bonds. Address County Commrs.

N. C., Greensboro.—Bids will be received until 10 A. M. Aug. 11 by W. C. Boren, Chrmn. Commrs., Guilford county, for \$9000 5 per cent. special school district building bonds.

N. C., Durham.—Bids will be received until noon Aug. 4 by George W. Woodward, City Clerk, for \$60,000 4 1/2 per cent. 15-year sewer bonds.

N. C., Kenansville.—Ghaston, Smith and Limestone townships, Duplin county, will vote on railroad-aid bonds. Address County Commrs.

N. C., Kennansville.—Wolfs Crape Township, Duplin county, is reported to have voted railroad-aid bonds. Address County Commrs.

N. C., Salisbury.—All bids received July 14 for \$35,000 6 per cent. 13-year bonds Grant's Creek Drainage Dist., Rowan county, were rejected, and bonds will now be sold at private sale. Address C. M. Miller, Chief Engr. and Supt.

N. C., Southport.—Smithville township, Brunswick county, has voted \$10,000 road bonds. Address County Commrs.

N. C., Tryon.—Bids are being received for \$20,000 6 per cent. 20-year water bonds, dated July 1, 1914. Hon. E. E. Missildine is Mayor. Further particulars will be found in the advertising columns.

N. C., Waynesboro.—\$150,000 railroad-aid bonds are voted in Wayne county. Address County Commrs.

N. C., Winston-Salem.—Bids will be opened Aug. 5 for \$218,000 funding, \$60,000 school, \$15,000 street, \$50,000 water and \$50,000 sewer 5 per cent. 30-year bonds. W. H. Holcomb is City Secy.

Okla., Blackwell.—The report that water and electric-light bonds were to be voted on is erroneous.

Okla., Cushing.—Question of issuing \$25,000 water main extension bonds is under consideration. Address The Mayor.

Okla., Mangum.—Election to vote on \$100,000 light-plant bonds will be held Aug. 4. Address Mayor Border.

S. C., Ridgeland.—Election to vote on \$10,000 school-building bonds is to be held July 28. C. E. Perry is Secy. Board of Trustees.

S. C., Winnsboro.—Question of issuing \$100,000 of bonds for electric-light plant and water-works system is under consideration. Address The Mayor.

Tenn., Chattanooga.—Election is to be held in Hamilton county Aug. 6 to vote on \$200,000 school and \$100,000 hospital bonds. Address County Commrs.

Tenn., Clifton.—\$150,000 railroad-aid bonds have been voted. Address The Mayor.

Tenn., Crossville.—Election is to be held in Cumberland county Aug. 20 to vote on \$75,000 5 per cent. road bonds; denomination \$1000. W. F. Bandy is Chrmn., Geo. P. Burnett Secy., County Commrs.

Tenn., Manchester.—Election is to be held Aug. 15 to vote on \$8000 school bonds. Address The Mayor.

Tenn., Ripley.—\$15,000 5 per cent. 20-30-year street-improvement bonds are voted, and bids for same will be received until noon Aug. 2. J. R. Johnston is City Treas.

Tenn., Toone.—No satisfactory bids were received for the \$3000 6 per cent. 10-20-year school bonds offered July 15, and new bids will be received until noon Aug. 10; denomination \$500; dated July 1, 1914. J. A. Overton is Mayor.

Tenn., Wartburg.—\$50,000 5 per cent. 20-year Morgan county road bonds were purchased by M. Farson & Co., Chicago.

Tex., Joaquin.—\$9000 5 per cent. 40-year school bonds are being offered for sale; denomination \$500; \$5000 dated July 14, 1913; \$4000 June 6, 1914. E. L. Ramsey is Secy., Board of School Trustees.

Tex., Granger.—Bids will be received until 8 P. M. Aug. 4 for \$15,000 5 per cent. 20-40-year sewer-improvement bonds; dated June 1, 1914. G. H. Kincaid is City Secy.

Tenn., Wartburg.—Bids will be opened Aug. 17 for \$270,000 5 per cent. 20-year Morgan county road bonds; denomination \$1000; dated July 1, 1914; maturity July 1, 1934. Address S. T. Kimball, Secy. Finance Comm., Deer Lodge, Tenn.

Tex., Austin.—The Attorney-General has approved the following securities: \$2000 5 per cent. bonds Fisher County Common School Dist. No. 6; \$16,000 5 per cent. 20-40-year bonds Brunner Independent School Dist.; \$20,000 5 per cent. 40-year Clarksville street and alley bonds; \$200,000 5 per cent. 20-40-year El Paso school bonds; \$175,000 Beaumont wharf-improvement bonds; \$40,000 water-works, \$25,000 street-improvement, \$20,000 sewerage, \$10,000 park and \$5000 electric-light 5 per cent. bonds, Sherman; \$2000 5 per cent. 20-40-year bonds Tarrant County, Dist. 57; \$2000 5 per cent. 5-20-year bonds Lubbock County, Dist. No. 5; \$1000 5 per cent. 10-20-year bonds Van Zandt County, Dist. No. 19; \$100,000 5 per cent. 10-40-year Wharton county road and bridge bonds; \$1950 5 per cent. 10-40-year Navasota school-repair bonds; \$50,000 5 per cent. 10-40-year Lamar county road bonds.

Tex., Beaumont.—Date for sale of \$475,000 wharf-improvement bonds will soon be fixed. Address The Mayor.

Tex., Belton.—\$105,000 bonds Road Dist. No. 7, Holland Dist., Bell county, have been purchased by People's National Bank of Belton at par and accrued interest.

Tex., Big Springs.—Water-works improvement bonds are reported voted. Address The Mayor.

Tex., Cotulla.—Election is to be held Aug. 8 to vote on \$14,000 artesian well and water-works bonds. Address The Mayor.

Tex., Ozona.—All bids received July 13 for \$40,000 5 per cent. 40-year Crockett county road bonds voted Dec. 23, 1913, were rejected; denomination \$1000; dated Apr. 10, 1914. Address Comms. Court, Tom Molen, County Clerk.

Tex., Paris.—Bids will be received until noon Aug. 20 by S. L. Bedford, Auditor Lamar County, for \$50,000 5 per cent. 40-year road bonds.

Va., Bristol.—\$50,000 high-school bonds have been purchased by a Chicago firm. Address Board of Education.

Va., Charlotte C. H.—Bids will be received until noon Aug. 25 for \$8000 5 per cent. 20-40-year Charlotte county jail bonds; dated July 1, 1914; denomination \$500; P. N. Morgan, J. C. Carrington, committee, Board of Supervisors, Charlotte county. Further particulars will be found in the advertising columns.

Va., Highland Park, P. O. Richmond.—\$30,000 5 per cent. 30-year street-improvement bonds have been purchased by T. L. Branch & Co. at 96.50; denomination \$500; dated July 1, 1914. Address The Mayor.

Va., Norfolk.—Ordinances are pending before the City Council to provide for an issue of \$380,000 4½ per cent. 30-year bonds. Included in this amount is \$288,000 6 per cent. 30-year bonds maturing Oct. 1, 1914, which will be renewed at the 4½ per cent. rate. R. E. Steed is City Clerk.

Va., Pulaski.—Election will probably be called to vote on \$75,000 street-improvement bonds. Address The Mayor.

Va., Rocky Mount.—\$40,000 5½ per cent. water-works and sewerage bonds will be offered for sale on Aug. 15. W. A. Belcher is Town Recorder. Further particulars will be found in the advertising columns.

W. Va., Fulton.—Bids will be received until noon Aug. 10 for \$20,000 5 per cent. 10-25-year school bonds. Address A. C. Wagener, Secy. Board of Education of Washington County Dist., Ohio county, at Fulton.

W. Va., Grafton.—\$110,000 Grafton Independent School Dist. bonds have been purchased at \$1220 premium by Seasongood & Mayer, Cincinnati.

W. Va., Morgantown.—It is proposed to hold an election in Battelle Dist., Monongalia county, to vote on \$160,000 railroad-aid bonds. Address County Comms.

W. Va., Piedmont.—Election will probably be held to vote on \$85,000 of bonds for improvement of streets, water-works, sewers, etc. Address The Mayor.

W. Va., Richwood.—\$12,000 6 per cent. municipal building bonds will be offered at public auction between 10 A. M. and 4 P. M. Aug. 1; denomination \$500; maturity 1924 to 1943, inclusive. A. L. Craig is Mayor. Further particulars will be found in the advertising columns.

W. Va., St. Marys.—\$60,000 6 per cent. 20-30-year Washington Dist., Pleasants county, permanent improvement road bonds are being offered; denominations \$100 and \$500;

W. C. Dotson, A. S. Grimm and W. E. Clovis, Comm.

W. Va., Williamson.—The \$500,000 Mingo county road bonds to be voted on Aug. 11 are 10-34-year 5 per cents; denomination \$500. A. D. Dicket is County Clerk.

FINANCIAL NOTES

The committee representing the holders of 4 per cent. refunding mortgage gold bonds of the St. Louis & San Francisco R. R. Co., due July, 1951, announces that a majority of the bonds have been deposited and that the trustee under the mortgage has filed a bill to foreclose it. Bondholders may continue to make deposits.

The Oklahoma State Insurance Agents, who held their annual convention at Oklahoma City, will meet next year at Tulsa. Officers for the year were elected thus: F. E. Thurman, Bartlesville, Pres.; Q. L. Cox, Durant, 1st V.-P.; H. C. Ashby, Tulsa, 2d V.-P.; Charles P. Cansler, Enid, 3d V.-P.; J. F. McCullough, Oklahoma City, Secy.-Treas. (re-elected.)

Fish Industry at Manila.

J. F. Boomer, Manila, Philippine Islands, writes to Daily Consular Trade Reports that the fish markets of Manila are to a large extent supplied with fish from the ponds at Malabon and the regions of Rizal and Bulacan Provinces nearest the bay. These ponds are usually fed from the tide marshes of streams emptying into Manila Bay. The fish industry represented by these ponds supplies thousands of fishermen with employment. There are no statistics available to show what proportion of the fish offered for sale in the markets are caught in the bay's shallow waters and what proportion are supplied from these privately-owned fish ponds. These ponds are used for producing a very common variety of market fish, known locally as "bangus." These fish are spawned in the waters of Marinduque and Batangas. Gathering the spawn for the fish ponds near Manila constitutes an active industry in the regions adjacent to their spawning beds. The industry is largely in the hands of the women. Wide pieces of coarse cloth are used for gathering from shallow water the spawn, which is put into small earthen jars for shipment to the fish ponds near Manila. The process requires great patience and care. The jars are constantly watched in transit and the water changed daily. These jars of "seed" fish are said to sell for as high as \$2.50 each.

J. G. White & Co., Limited.

The fourteenth report and balance-sheet of J. G. White & Co., Limited, covering the fiscal year ended February 28, 1914, is issued in pamphlet form. The headquarters of the company are at 9 Cloak Lane, Cannon street, London, E. C., England. The directors state that results, considering depressed financial conditions, have been fairly satisfactory, and show a net profit on the year's trading of 70,387 pounds, 3 shillings, 8 pence. A further 15,000 pounds is carried out of profits to reserve, making it now 135,000 pounds. Dividends of 12 per cent. on both classes of shares and an extra dividend of 10 shillings per share are recommended. The balance-sheet shows total assets of 604,369 pounds, 6 shillings, 2 pence. J. G. White is chairman of the board, the other directors being A. N. Connett, Lord Arthur Butler, Wm. C. Burton and John B. White. E. A. Borel is secretary.

For Farmers in Co-operation.

R. W. Minor of Marion, Ala., writes to the MANUFACTURERS RECORD that the farmers of his locality are figuring upon the organization of a co-operative exchange for the purpose of centralizing the products for community shipment and of aiding in the development of natural re-

sources. The possibilities in canneries and cold-storage plants are being considered in this connection.

Seeking an Iron Industry.

Hilton Collins Company, 1300 12th street, Louisville, Ky., writes to the MANUFACTURERS RECORD:

"We are manufacturers of singletrees. As the months of May, June, July and August are dull in this business, we are desirous of adding something else to our

line that we could manufacture. If possible, we would like some item that is in demand in the winter, so that it could be manufactured in our dull season. We prefer to make something in the iron line, if possible, rather than in the wood line, and it would necessarily be some item that could be made without the addition of a great deal of machinery. We desire to ask if you can suggest any item that it would be well to make either in iron, wood, or both."

St. Louis & San Francisco Railroad Co.

To Holders of 4½ Refunding Mortgage Gold Bonds

Due July 1, 1951:

As stated in the Committee's circular, dated June 23, 1914, the Receivers have informed the Committee that the earnings of the properties were more than sufficient to pay interest on the Refunding Bonds, but that the same were used for the physical rehabilitation of the property, the payment of car trusts, and for other capital expenditures. In consequence no funds were available to pay the interest due July 1, 1914, on the Refunding Bonds, and when the Court refused to issue Receivers' certificates to provide for this interest, default naturally followed.

The Committee now announces that a majority of the bonds have been deposited under the Deposit Agreement dated June 20, 1914; that the Certificates of Deposit of THE CENTRAL TRUST COMPANY OF NEW YORK have been listed on the New York Stock Exchange, and that the Trustee under the Refunding Mortgage has filed a bill to foreclose the same.

For the present, holders may continue to deposit their bonds, but the Committee desires to make clear to bondholders that have not yet deposited that it is acting solely for the deposited bonds, and that it reserves the right at any time without further notice to refuse further deposits.

Dated New York, July 16, 1914.

FREDERICK STRAUSS, Chairman.

Of J. & W. Seligman & Company.

J. M. WALLACE,

President, Central Trust Co. of New York.

ALEXANDER J. HEMPHILL,

President, Guaranty Trust Co. of New York.

EDWIN G. MERRILL,

President, Union Trust Co. of New York.

HARRY BRONNER,

Of Hallgarten & Company.

C. W. COX,

Of Robert Winthrop & Company.

BRECKINRIDGE JONES,

President, Mississippi Valley Trust Co., St. Louis.

Committee.

JOHNE LARKIN & RATHBONE, Counsel.

CHARLES E. SIGLER, Secretary,
54 Wall Street, New York City.



Why Put a New Fuse Into the Circuit Every Time You Have a Blowout?

Cut annual fuse maintenance 80% and secure positive electrical protection under all conditions.

ECONOMY RENEWABLE FUSES

When an Economy fuse blows, you don't throw it away—you simply insert a new renewal element and have virtually a new fuse. 25 blowouts of an ordinary non-refillable fuse (100 Amps., 250 Volts) cost \$10.12½, while 25 blowouts of an ECONOMY renewable cartridge FUSE of the same capacity cost \$2.10—and remember Economy fuses give absolute protection—they do not vent fire nor hold a sustained arc. They are the only renewable fuses uniformly rated. Economy fuses meet the performance specifications governing the use of such devices.



Why spend four times more than necessary in fuse maintenance? Write today for Bulletin M. R.—and list of prominent satisfied users.

Two renewal elements furnished free with each Economy fuse. Figure the saving yourself.

Economy Fuse & Mfg. Co. Kinzie and Orleans Sts. CHICAGO

Classified Opportunities

MEN WANTED

WANTED—Representatives to handle our Aruco Metal Silos and K. D. Tanks, made of rust-resisting pure iron. State experience and territory wanted. Address The C. C. Pouts Tank & Silo Co., Middletown, Ohio.

WANTED—Live agents on a commission basis to handle full line of vises and other machinists' and plumbers' tools. Good opportunity for men calling on the shops and industries of the South and Southwest. Address "Vises," care Manufacturers Record, Balto., Md.

UNDERSIGNED COUNSEL will confidentially negotiate preliminaries for important executive, technical, administrative and professional positions insuring strictest privacy. Not an agency, but a highly-endorsed, high-grade method of negotiating preliminaries only, for \$3000 to \$12,000 men. Send address only for explanation. R. W. Bixby, Lock Box 134-E6, Buffalo, N. Y.

AGENTS WANTED among supply dealers and salesmen for an exceptional house-lighting machine, suitable for small homes as well as large; simple, durable, economical; satisfaction guaranteed to customers; has excellent selling points; a live proposition. Write for terms. The Alexander N. Milburn Co., Baltimore, Md.

PAINT AND BUILDING SPECIALTY SALESMAN—Established paint specialty house has well-paying position open for capable salesman thoroughly familiar with paint-consuming trade among factories, electric railways, county commissioners and large building owners generally. Address The Colorcraft Co., Cleveland, Ohio.

YOUNG MEN familiar with mill supply and jobbing trade to represent manufacturer of new and successful line of patented tools. Give experience and territory covered. No. 1568, care Manufacturers Record, Balto., Md.

ARE MANUFACTURING Hoover Disc Grinder and Hoover Axle Set, both of which will eventually be in every blacksmith shop. Want local representatives to handle on commission and manufacturer's agent to place with their salesmen. Patents for both of these also for sale. Address The Hoover Manufacturing Co., Beloit, Kansas.

WANTED—Superintendent for planing mill; one who is competent and capable of producing results; must be a good estimator and hustler and understand taking work from plans; an excellent position for a good sober man. No. 1568, care Manufacturers Record, Balto., Md.

AGENCIES WANTED

WANTED—By manufacturers' agent handling building specialties, several additional lines. Address No. 1576, care Manufacturers Record, Balto., Md.

WANTED—Manufacturers' accounts, all lines, consignments solicited, goods introduced. Manufacturers wanting live connections in West Florida address No. 1579, care Manufacturers Record, Balto., Md.

WANTED—Sales agency for all lines pertaining to builders' specialties; East Tennessee as territory; can furnish satisfactory references to interested concern; modern warehouse facilities. Address Daniel Briscoe, Jr., 325-327 State St., Knoxville, Tenn.

A CONCERN in close touch with steel mills, foundries and large manufacturing plants desires agency for appliances or materials in which these plants would be interested. Are in a position to get best results. Specialties preferred. Address No. 1566, care Manufacturers Record, Balto., Md.

SITUATIONS WANTED

EFFICIENCY ENGINEER desires position vicinity Baltimore, Md., with industrial firm. Designing, systematizing, power testing. Member Efficiency Society of New York. Address No. 1569, care Manufacturers Record, Balto., Md.

CONTRACTORS' ENGINEER—13 years' responsible charge large general contract work; 4 years' charge of estimates, contracts, office and field organizations. Will make investment with position as executive. No. 1564, care Manufacturers Record, Balto., Md.

PHYSICIAN AND SURGEON DESIRES CONTRACT POSITION with reliable corporation, construction company, or manufacturing firm, to attend employees; salary or special contract; 15 years' experience; aged 38; best references; can close on short notice. No. 1571, care Manufacturers Record, Balto., Md.

A BUSINESS MAN of ability, treasurer and manager of a manufacturing plant, wishing to change to the selling end, is open for a proposition as Southern sales agent for manufacturers of high-grade articles. Correspondence solicited. Address No. 1574, care Manufacturers Record, Balto., Md.

WANTED—Position as superintendent of quarry; 14 years' experience; young man with small family; am hustler and good organizer; can furnish the very best of references. Address M. B. Malone, P. O. Substation No. 2, Charlotte, N. C.

RATES AND CONDITIONS

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 25 lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 18c. per line; 500 lines 16c. per line; 500 lines or more, 15c. per line.

PRACTICAL BUILDER, draughtsman, thoroughly familiar with general construction work, reinforced concrete, foundations, etc., position with contracting company in South. No. 1580, care Manufacturers Record.

SUPERINTENDENT of construction engineer, 10 years' experience with Government, municipalities and contractors, on slow sand and mechanical filters, hydro-electric plants, dam construction and irrigation works; also familiar with railroad terminal work; work has been on largest filter plants in the East; Southern location wanted. Correspondence invited. Address No. 1573, care Manufacturers Record, Balto., Md.

CHEMIST—Young man, graduate of Georgia "Tech.," desires position with opportunities for advancement; salary a minor consideration. The opportunity is what I am after. X. Y. Z., 116 President St. W., Savannah, Ga.

MASTER MECHANIC wishes to change; understands construction and sawmilling; good reference; will go anywhere. Address No. 1575, care Manufacturers Record, Balto., Md.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical, Electrical and Chemical Engineering and General Science, leading to the degree of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), Chemical Engineer (Ch.E.), and Bachelor of Science (B.S.). Also special courses. Splendidly equipped new engineering laboratories. Send for catalogue to Registrar.

CAPITAL WANTED

WANTED—\$25,000 at 6 per cent., three years, first mortgage real estate worth \$65,000 as collateral. "Orchards," Charleston, S. C.

WANTED—Capital to patent and market my inventions; new, quick, easy, cheap way to work tool steel in machine shops and garages. Address No. 1582, care Manufacturers Record, Balto., Md.

SAWMILL DIRECTORY

DIRECTORY OF SAWMILLS, covering States of Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Tennessee and West Virginia. Index on each page shows where plant is located; its capacity; railroad upon which located; what the plant turns out and what its equipment consists of, that is, whether mill is band or circular, whether it has electric-light plant, logging railroad, etc. States specifically what kind of lumber is produced, covering more than 50 different kinds. Sold separately by States at \$3 per State, or \$15 for all eight States. More than 10,000 mills reported on. Address Southern Lumberman, Nashville, Tenn.

DRAFTING

STRUCTURAL STEEL DETAILS—Drafting work wanted for New York office. Address Henry P. Webb, Box 33, Stapleton, N. Y.

MODELS

MODELS MADE FOR INVENTORS—General machine work. Designing and perfecting. Developing automatic devices and machinery. In a position to do all kinds of light tool and machine work. Prices reasonable. Estimates cheerfully given. Ideal Machine Works, 64 Ann Street, New York City.

BUSINESS OPPORTUNITIES

PRACTICAL PARTNER WANTED AT ONCE—\$25,000 will buy one-half interest in hardwood plant, assets over \$100,000, no debts, located on the Shenandoah branch of N. & W. R. R.; mill fully equipped, 12 miles standard-gauge railroad, now in operation; only an experienced active partner wanted to take charge and manage operation; might sell entire operation; estimated profits, \$50,000 yearly. Write for particulars. G. S. Briggs, Norfolk, Va.

OWNER of a patent covering a gasoline engine desires to get in touch with railroad and interurban companies, gas-engine manufacturers and builders of freight and passenger cars with a view to manufacturing gasoline propelled cars for passenger and freight service, as the engine indicates great efficiency for this class of work. Address No. 1572, care Manufacturers Record, Balto., Md.

REAL ESTATE AGENCY FOR SALE—Having conducted a successful real estate business for 18 years, am quite ready to retire; will sell business, good will, etc., at a very reasonable price. Large list of desirable farm properties, fine list prospects. Located in the heart of the famous Piedmont section of Virginia. Correspondence solicited. L. M. Allison, Remington, Va.

FOR SALE—New sawmill, 25,000 capacity, drykiln and well-equipped sash and door factory in good city; 4 railroads; unlimited supply yellow pine accessible; partners disagreed; will sell one-third or all at right price and good title; quick action necessary. Thos. M. Ferguson, Hattiesburg, Miss.

WE HAVE two lumber plants in the South for sale. Also, number of other bargains. Before buying or selling a business consult Southern Brokerage Co., Box 107, Statesville, N. C. Business brokerage is our specialty.

PARTNER WANTED TO MANUFACTURE VENEER—We own in South Carolina fifty million feet of very fine red gum timber, also thirty million feet of other hardwoods and pine. Have complete band mill, drykilns and logging railroad. We wish to manufacture the gum into veneer, and desire to interest with us a party that is thoroughly familiar with the manufacture and sale of veneer. Must be able to take one-half interest in timber and plant. Large demand for gum veneer in home territory. Favorable freight rates North and East. Address No. 1578, care Manufacturers Record, Balto., Md.

MASTER PLUMBER AND STEAMFITTER, with experience in handling all kinds of work in this line, desires to hear from parties or locality where there is an opening for this business; can furnish best of references as to ability and character. Address No. 1581, care Manufacturers Record, Balto., Md.

CLAY TRACT of 41 acres on Tidewater & Western R. R. at crossing of county road about one mile from Bermuda on James River, known as Epps' Crossing. Tract has been tested over its entire surface, showing clay exists to the depth of 4½ feet and covers entire property with overburden of 3 to 9 inches. The State Geologist reports as being the best found on the coastal plain, suitable for pipe, tile, pavers, fireproofing, and stiff-mud and dry-press face brick. Burns a dark cherry red, drying easily and safely.

This valuable clay bed, with a manufacturing site at Chester, for sale reasonable. The manufacturing site, consisting of between 3 and 4 acres, is on A. C. L. R. R. at junction of Tidewater & Western R. R., affording splendid shipping facilities to North or South by A. C. L. N. & W., S. A. L. & T. & W., or by water. With proper development should prove a good money-maker. Full particulars upon request. Address Central Realty Co., Richmond, Va.

INFORMATION any subject. Congress, corporations, investigations, Gov't bids, trade opportunities. Miscellaneous data and statistics. Researches. Daily news letter. General Information Bureau, Box 263, Washington, D. C.

WILL SELL 2000 acres good land North-east Mississippi, \$10 an acre, or prefer to borrow \$10,000 ten years, 5 per cent. interest. Ike A. Chase, Memphis, Tenn.

WANTED—To connect with individuals who will be willing to invest \$15,000 in a very successful graphite company in the best section in the South. The company is most successful in selling its product, and with additional capital can enjoy increased sales at a large profit. The best references can be given. Address P. O. Box 732, Atlanta, Ga.

DOORS

WANTED—To contract the output of our door factory; capacity, about 100 doors daily. W. R. Flowers Lumber Co., Dothan, Ala.

INDUSTRIES WANTED

PACKAGE FACTORY AND STAVE MILL will find Bolton, Columbus county, North Carolina, a profitable location; plenty of suitable timber available; growing local demand for finished product; good railroad facilities. Free location will be given responsible concern. Address John Innes, Secretary Bolton Chamber of Commerce, Bolton, N. C.

MISCELLANEOUS

FREE SITE given for factory; electric power cheap; no city tax; 2 railroads; plenty of labor. Berkeley Land Company, Martinsburg, W. Va.

HENRIETTA, TEX., offers unlimited supply natural gas &c. to manufacturers; fire brick, tile shales; water; low taxes; healthful; 3 railroads; unusual opportunity legitimate enterprises. Address Booster Club.

NORTH EAST, MARYLAND, has free land and other lend-a-hand inducements to offer for new industries. Midway between Baltimore and Philadelphia. Pennsylvania and B. & O. Railroads. Write to the Board of Trade, North East, Md.

BLUEFIELD, WEST VIRGINIA, the gateway to the vast Pocahontas coal fields, and the distributing point for half a million contented laborers, needs an overall factory, needs a mine implement factory and needs a brick plant. Address C. T. Boykin, Secretary Bluefield Chamber of Commerce.

FREE—Brick clay and shale deposits, very extensive, and situated well for working and as regards markets; will be donated by railroad running through same to any responsible party that will erect and operate a 10,000 daily capacity plant. Address J. R. McConnell, Industrial Agt. H. & C. Ry., Carthage, N. C.

AN UNUSUAL OFFER—The owner of a 26-mile railroad will give a 15 per cent. interest in the road to a manufacturing concern locating on the line, whose freight will be substantial. A splendid site on a river, capable of developing 1200 continuous horsepower, will also be donated. The road has good main line connections with generous percentages. It is earning a surplus and is in a rapidly developing territory rich in possibilities. References will be required with answers to this advertisement. Address No. 1565, care Manufacturers Record, Baltimore, Md.

INDUSTRIAL PLANTS FOR SALE

LIME PLANT

FOR SALE—Eight-kiln lime plant in East Central Tennessee for sale; owner wants to convert into cash; now operating; gravity transportation from quarry to kilns; favorable freight rates for wide territory, including parts of Florida and Louisiana and North Carolina. Address E. H. Pringle, Jr., Charleston, S. C.

PRINTING PLANT

FOR SALE OR LEASE—Complete printing plant in good live town. Address Bank of Mulberry, Mulberry, Fla.

DISTILLED WATER AND BOTTLING PLANT

FOR SALE—Distilled water and bottling plant, \$60,000, Houston, Texas; well established; \$25 daily profits; fine prospects. For particulars address A. J. Elliott, 1919 Crawford St., Houston, Texas.

GREY IRON FOUNDRY

FOR SALE—Grey Iron Foundry; fully equipped; a good proposition to a practical man. Address Vulcan Iron Works, Houston, Tex.

GRANITE QUARRY AND CRUSHING PLANT

GRANITE QUARRY and rock-crushing plant, complete and operating; located on main line of railroad and close to good market; famous Georgia granite. Address No. 1577, care Manufacturers Record, Balto., Md.

WOODENWARE PLANT

GREATEST BARGAIN YET OFFERED—An up-to-date woodenware plant of modern brick construction; power plant complete and filled with good machinery, including hangers, shafting and belting; ready to operate at a minute's notice; a double-track brick drykiln; 1500 ft. of new sidetrack; 7 acres of land with 6 buildings; between 2 railroads; electric cars stop at office. This plant is located at Anniston, Alabama, in the timber belt. A fine grade of yellow-pine lumber delivered at plant either by team or rail at \$11 to \$12 per thousand feet. Shipping facilities excellent and in the very heart of the best Southern trade. This entire plant will be sold either for cash or on easy payments, and if desired we will take in exchange for a substantial payment some good real or personal property. Reasons for selling confidentially furnished. For full particulars address J. S. Lehman, 823 Columbia Ave., Lancaster, Pa.

BROOM HANDLE FACTORY

FOR SALE—A complete broom-handle factory; have splendid machinery. G. W. Atherton, Livermore, Ky.

Classified Opportunities

MILLWORK PLANT AND PLANING MILL
MILLWORK PLANT AND PLANING MILL FOR SALE; practically new; in thriving town of 16,000 inhabitants; water and rail facilities. Pleased to correspond or interview interested parties. Address No. 1561, care Manufacturers Record, Balto., Md.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

202½ ACRES, kaolin deposit between 35 and 50 acres, \$15,000. 202½ acres Fuller's earth deposit, \$15,000. Southern Ins. & Realty Co., Georgia Life Bldg., Macon, Ga.

FOR SALE—455 acres good farm land with round pine timber, hardwood and good bed phosphate, in Secs. 18 and 19, Tp. 7R. 16, Alachua county, Fla., on Santa Fe River; good stock section; fine hunting and fishing. Perfect title. Price \$4000; ¼ cash and balance in 1, 2 and 3 years. Reasonable discount for all cash. Apply to J. B. Johnson, Live Oak, Fla.

IN the territory near Semmes, Alabama, within 20 miles of Mobile, we have several thousand acres of good land for sale at extremely low price. This is where Northern oil men are now wild-cattling, with good prospects for oil. W. W. Woodruff, Mobile, Ala.

SILICA SAND FOR SALE—Very large deposit of pure white silica sand, with mill producing 150 tons per day; sand analyzes 98.86 pure; ideal place for silicate of soda works or chemical works; will bear closest investigation. J. F. Ballou, Millington, Ill.

BRICK CLAY PROPERTY
BRICK CLAY.—Attention, Brick Men! Have located within five miles of Atlanta large supply fine brick clay; excellent railroad facilities. This property is splendid location for Southern market. Can be bought reasonably, considering actual value. Estate of James E. Lynch, P. O. Box 519, Atlanta, Ga.

TIMBER LAND FOR SALE
TWO THOUSAND THOUSAND (200,000) acres timber land in Florida, containing over 5,000,000 feet of original growth pine; has been cruised by expert; placed on the market for the first time at a very low figure. South Carolina timber; 15,000 acres on the Atlantic Coast Line and Southern Railroad. Estimated 65,000,000 feet short-leaf pine. For price and full particulars apply to Johnson's American and Foreign Real Estate Exchange, 945 Pennsylvania Avenue, Washington, D. C.

FOR SALE—\$2,000 acres yellow pine DeSoto Co., Fla.; will cut about 70,000,000 feet pine and 5,000,000 feet cypress. Reasonable terms. Address Box 135, Wauchula, Fla.

NO. 547—VIRGINIA TIMBER TRACT—100 ACRES—\$3500; located in Albemarle county on a good road; 2 miles from railroad; estimated to cut over 1,000,000 feet of oak, pine, poplar and chestnut. For particulars regarding this and other timber and mineral tracts and farm lands inquire of Edward S. Wilder & Co., Charlottesville, Va.

A FEW GOOD TRACTS in Southern States at prices attractive for investment or operation. Hemlock, spruce, oak, poplar, gum, cypress. Real Estate Investment Co., 816 Connecticut Ave., Washington, D. C.

HARDWOOD TIMBER TRACTS, 1000 acres up, direct from owners; cut 4000 feet white oak to acre; \$8 acre in fee; near proposed railroad, Newton county. Also have cheap stock and colonization tracts. Fredricks, Springdale, Arkansas.

FOR SALE—5000 acres of virgin hardwood timber near the Texas & Arkansas line. Address F. M. Greene, Atlanta, Texas.

TIMBER TRACTS located for manufacturers or investors by practical timbermen. Correspondence solicited. Jo A. Parker, Parma, Mo.

CROSSTIES FOR SALE
FOR SALE—25,000 white oak crossties, 6x8—8", hewn, ready for shipping. J. M. Shumaker, Jackson, Miss.

FARM AND TIMBER LANDS
FOR SALE—Farm and Timber Land in Southeast Georgia. Land produces two and three crops per year. Especially adapted to growing cotton, corn, alfalfa and, in fact, anything that grows in the Southern States. If interested, write us for full information. South Georgia Farms & Realty Co., Fitzgerald, Ga.

7240 ACRES on S. A. L. Railroad will cut as follows:
2,500,000 feet pine at \$2.50 M..... \$6,250.00
3,000,000 feet hardwood at \$2 M..... 6,000.00
2,000,000 feet large cypress at \$3 M.... 6,000.00
40,000 cypress ties at 10c. each..... 4,000.00
10,000 cords of wood at 25c. cord..... 2,500.00
10,000 cypress poles at 25c. each..... 2,500.00

Total for timber..... \$27,250.00
Now, listen! Owing to other interests that will not let owners attend to this tract, we can sell this tract for \$27,500. When timber is taken off you will have as fine cattle ranch and farming land as you want. Remember, \$27,500 in fee. Southern Insurance & Realty Co., 314 Ga. Life Bldg., Macon, Ga.

FOR SALE—About 20,000 acres of land in fee in Eastern North Carolina, in close proximity to railroad. This land contains about 60,000,000 feet of pine and cypress timber. The land without the timber is splendid for farming. With the timber off is worth the price asked for the whole. Timber, Box 1089, Norfolk, Va.

FIFTEEN THOUSAND FOUR HUNDRED ACRES of good truck and citrus-fruit land, located in Santa Rosa county, twenty miles east of Pensacola. Seven thousand acres of this land is covered with a heavy growth of long-leaf pine, which will cut about twelve million feet. Price three dollars per acre. W. H. Upp, Box 331, Pensacola, Fla.

FARM AND TIMBER LAND on the easy-payment plan; some small improved tracts; good for cotton, corn, alfalfa and grain. Prices from \$4 to \$25 per acre. W. Knight, Real Estate Dealer, Bigelow, Arkansas.

OIL AND FARM LAND
AN OIL WELL and fine alfalfa farm of 170 acres; well improved; fine water; all fine black bottom land; on railroad; have loading switch for alfalfa, which will also be used for shipping oil when well now drilling is brought in; write for particulars and price; land worth the money, to say nothing of oil prospects. Also, 730-acre fine corn and alfalfa farm at a bargain; oil prospect; very fine. W. P. Poland, Ardmore, Okla.

MOUNTAIN ESTATE

MOUNTAIN ESTATE, 50 miles from Asheville, 5 miles from Southern Railway, elevation 2000 to 3000 feet, mild climate, pure air, cold spring water, running brooks; comfortable log house of 4 rooms, stables and out-buildings; 20 acres in cultivation; 100 bearing apple trees, peaches, plums, grapes, blackberries, vegetable and flower garden; 2000 acres hardwood timber, oak, poplar, hickory, chestnut, pine, etc.; also, rhododendron, kalmia, azalea, dogwood, galax, trailing arbutus, mistletoe, squirrels, quail, wild turkeys, coons, possums, \$20,000; easy terms. Address Wm. M. Pratt, Marion, N. C.

FRUIT, FARM AND TRUCK LANDS

ALABAMA

FOR SALE—2965 acres in Tallapoosa county, Alabama; 1000 acres river bottom; pays 12 per cent. on investment; \$15 per acre. For particulars write Charles A. Stewart, Temple Court, Chattanooga, Tennessee.

FLORIDA

THE PALATKA FARMS COMPANY of Palatka, Florida, offers to homesteaders the very superior advantages of splendid soil, adapted to potatoes, corn and trucking, or that for oranges and grapefruit, or for combination of both, with location unsurpassed, lying along the beautiful St. Johns River, 2 miles of Palatka, an up-to-date city of 8000 population. It boasts of electric-light and gas plants, four railroads and cheap river transportation. Write for literature. P. J. Becks, Palatka, Fla.

19,000 ACRES of the very best farm and vegetable land South Florida; on R. R.; solid body; artesian water; easy terms; for a short time will offer for \$7.50 per acre; land retelling for \$100 per acre adjoining. G. C. Rogan, Lakeland, Fla.

THREE MONTHS FREE—Subscription to the Indian River Farmer. For truckers, fruit growers, general farmers, and folks who want to know about Florida. Address Indian River Farmer, Dept. "V-1," Vero, Fla.

FOR SALE—100 acres choice fruit and garden land near depot; brick road being built will run close by; easy reach of Tampa, also Plant City; divided into 5-acre lots, each fronting 40-ft. road. N. D. Smith, 915 Florida Ave., Tampa, Fla.

GEORGIA

15-ACRE PECAN AND TRUCK FARM for sale. Old age (89 years) and no heirs to leave it to my only reason for selling; near churches, schools, postoffice and R. R. station and one hour by rail to Jacksonville. Write P. O. Box 243, St. George, Ga.

NORTH CAROLINA

THE finest farm land in Moore county, the newly discovered tobacco field, will be sold at cost in any acreage by railroad owning the tract and anxious to develop territory; cleared and uncultivated portions. Additional houses will be erected and long terms given. This is the best opportunity to get these lands cheap. For particulars write J. R. McConnell, Land and Industrial Agent, R. & C. Ry., Carthage, N. C.

FOR SALE—On Slocumb Creek, 17 miles below Newbern, my beautifully situated home with 550 acres of land; home can be enjoyed for a summer as well as a winter resort; land fine for truck; now mostly in timber. Price \$50 an acre. Come and see it now. William Buys, Havelock, N. C.

TEXAS

100-ACRE FARM, well improved, high state of cultivation, 4 miles Riviera; best section South Texas; part cash, part trade or long time. Hal Runnels, Riviera, Tex.

VIRGINIA

8 ACRES FINE TRUCK LAND, 6-room dwelling; good outbuildings, fine orchard, apples, peaches, plums, grapes, etc.; on Virginia Beach electric line, 5 minutes' walk from Lynnhaven station. \$2500; terms easy. Address H. V. Moulton, Duke, N. C.

FOR SALE—4300 acres good undeveloped farming and orchard land; good soil and convenient to railroad. Price \$5 per acre. Lane-Harris Corporation, Altavista, Va.

FARMS FOR SALE—Large list Northern Virginia grazing, grain, fruit and poultry farms; colonial estates; \$500 to \$80,000; catalogue. B. F. Perrow, Remington, Virginia.

VIRGINIA, the ONLY just right climate. Elegant farms ten to thirty dollars acre. One-third cash, balance when convenient. J. E. Barrett, Carrsville, Va.

MACHINERY AND SUPPLIES

FOR SALE—Five-ton champion horse road roller. Will sell cheap to quick buyer. Address No. 1564, care Manufacturers Record, Balto., Md.

22 H. P. FAIRBANKS-MORSE STATIONARY GASOLINE ENGINE, practically as good as new. Cheap. Geo. W. Willis, Canal Dover, Ohio.

PATENTS AND INVENTIONS

INVENTIONS developed by practical manufacturers. We have designed and manufactured the simplest and most complicated devices. References furnished. Russell Machine Co., Live Oak St., Dallas, Texas.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my special qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENTS—Herbert Jenner, patent atty. and mechanical expert, 606 F St., Washington, D. C. I report free of charge if a patent can be had and its exact cost. Send for circular.

PATENTS THAT PROTECT—Careful, honest work in every case. Patent your ideas; they may bring you wealth. 64-page book free. Fitzgerald & Co., 817 F street, Washington, D. C. Established 1878. Send for our book.

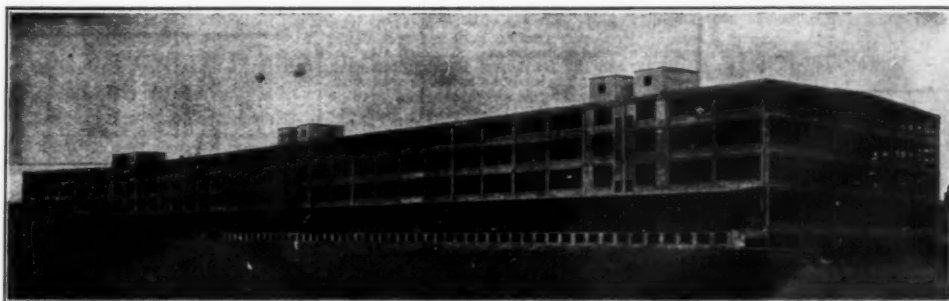
PATENT YOUR INVENTION—Send sketch for free expert search and report as to patentability. Books on inventions and patents, and book of references from congressmen, manufacturers, bankers and inventors, sent free. John S. Duffie & Co., Patent Attys., 620 F St. N. W., Wash., D. C.

PATENTS THAT PROTECT AND PAY. Advice and books free. Highest references. Best results. Promptness assured. Send sketch or model for free search of Patent Office records. Trade-marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

PATENT YOUR IDEAS—\$3000 offered for certain inventions; book, "How to Obtain a Patent" and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, patent attorneys, 978 F St., Washington, D. C.

PATENTS secured or Fee returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000 for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

STORAGE AND SHIPPING FACILITIES FOR JOBBERS AND MANUFACTURERS



Located in the Heart of Jacksonville's Shipping Section

AT JACKSONVILLE, FLA.
500,000 Feet of Floor Space

Cheap Storage Charges.

Insurance Rate ¼ of 1%.

A New Building that is Fire, Rat, Vermin and Burglar Proof.

Union Terminal Company
Jacksonville, Fla.

PROPOSALS

BOND ISSUES

BUILDINGS

PAVING

GOOD ROADS

GOVERNMENT PROPOSALS

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., July 13, 1914. Sealed proposals will be opened in this office at 3 P. M. August 24, 1914, for the construction, complete (including mechanical equipment, interior lighting fixtures, and approaches), of the United States Postoffice at Bedford, Pa. The building is one story and basement, with a ground area of approximately 4720 square feet; stone facing; composition roof; first floor of fireproof construction. Drawings and specifications may be obtained from the custodian of site at Bedford, Pa., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., July 13, 1914. Sealed proposals will be opened in this office at 3 P. M. August 26, 1914, for the construction, complete (including mechanical equipment, lighting fixtures, and approaches), of a one-story masonry-and-basement, stone and brick-faced building of 4000 square feet ground area; fireproof first floor and ceiling, composition roof, for the United States postoffice at Tupelo, Miss. Drawings and specifications may be obtained from the custodian at Tupelo, Miss., or at this office, in the discretion of the Supervising Architect. O. WENDEROTH, Supervising Architect.

MISSISSIPPI RIVER Commission, Fourth District, U. S. Engineer Office, Queen and Crescent Building, 346 Camp Street, New Orleans, La., July 3, 1914. Sealed proposals for constructing and delivering the steel hull sternwheel towboat Chalmette will be received at this office until 11 o'clock A. M. August 3, 1914, and then publicly opened. Information on application. C. O. SHERRILL, Major, Engineers.

GOVERNORS ISLAND, N. Y. H., July 22, 1914. Sealed proposals, in triplicate, for furnishing Forage and Straw required in Eastern Department during nine months commencing Oct. 1, 1914, will be received here until 10 A. M. Aug. 7, 1914. Information furnished on application to Department Quartermaster.

U. S. ENGINEER OFFICE, Galveston, Tex., July 13, 1914. Sealed proposals for dredging at Port Aransas, Tex., will be received at this office until 12 M. August 12, 1914, and then publicly opened. Information on application. C. S. RICHE, Lieut.-Col., Engrs.

U. S. ENGINEER OFFICE, Room 309 Custom-house, Baltimore, Md., July 9, 1914. Sealed proposals for dredging in Broad Creek, Md., will be received at this office until 2:30 o'clock P. M. July 24, 1914, and then publicly opened. Information on application. LANSING H. BEACH, Col., Engrs.

MISSISSIPPI RIVER COMMISSION, Fourth District, U. S. Engineer Office, Queen and Crescent Building, 346 Camp Street, New Orleans, La., July 13, 1914. Sealed proposals for constructing and delivering one steel barge will be received at this office until 11 o'clock A. M. August 12, 1914, and then publicly opened. Information on application. C. O. SHERRILL, Major, Engineers.

UNITED STATES ENGINEER OFFICE, Galveston, Tex., July 16, 1914. Sealed proposals for placing riprap and soil with sod at Federal Quarantine Station, Galveston, Texas, will be received at this office until 12 o'clock noon August 15, 1914, and then publicly opened. Information on application. C. S. RICHE, Lt.-Col., Engrs.

EXECUTIVE OFFICE, COMMISSION ON MEMORIAL TO WOMEN OF THE CIVIL WAR, 1729 New York Avenue, Washington, D. C., July 20, 1914. Sealed proposals for the erection of the Memorial in this city will be received here until 11 o'clock A. M. Thursday, August 20, 1914, and then publicly opened. Information upon application. WM. W. HARTS, Colonel, U. S. A., Executive Officer.

BOND OFFERINGS

Postponement of Bond Sale

The sale of \$15,000 bonds of the Mississippi City Rural Separate School District in Harrison county, Miss., has been postponed to Aug. 3, 1914. Interest increased to 6 per cent. JNO. J. MURPHY, Clerk. Gulfport, Miss., R. F. D. No. 1.

\$40,000 5½% Bonds

The Town of Rocky Mount, Virginia, will offer for sale on the 15th day of August, 1914, (\$40,000) forty thousand dollars water-works and sewerage bonds. Interest 5½ per cent., payable semi-annually. Address bids to W. A. Belcher, Recorder Town of Rocky Mount, Virginia.

Bond Sale

Montevallo, Ala. The Town of Montevallo, Alabama, has bonds to the amount of \$10,000, with interest at the rate of 6 per cent. per annum, payable semi-annually, bonds to run ten years from July 2, 1914.

J. M. REYNOLDS, Mayor.

PROPOSAL ADVERTISING INFORMATION

RATE: 20 cents per line per insertion.

PUBLICATION DAY: Thursday.

FORMS CLOSE 9 A. M. Wednesday. Copy received later cannot be published until issue of following week.

NIGHT LETTER: When too late to send copy by mail to reach us by 9 A. M. Wednesday, forward by night letter.

THE DAILY BULLETIN OF THE MANUFACTURERS RECORD:

Published every business day; gives information about the industrial, commercial and financial activities of the South and Southwest.

The Daily Bulletin can be used to advantage when copy cannot reach us in time for publication in the Manufacturers Record before bids are to be opened, or when daily publications are necessary to meet legal requirements.

The same rate applies—20 cents per line per insertion.

\$25,000 5% Bonds

Grenada, Miss. On Tuesday, August 3, 1914, at 3 P. M., the Mayor and Aldermen of Grenada, Miss., will receive bids on \$25,000 5 per cent. twenty-year coupon bonds, semi-annual interest. L. B. JAMES, City Recorder.

\$20,000 6% Water Bonds

The Town of Tryon, N. C., invites sealed bids for \$20,000 20-year 6 per cent. water bonds, to bear date July 1, 1914, interest payable semi-annually, purchaser to furnish bond blanks and legal opinion; all bids to be accompanied by a certified check for \$500. For full particulars regarding this issue write to E. E. MISSILDINE, Mayor, Tryon, N. C.

Sale of Municipal Bonds

Richwood, W. Va. Notice is hereby given that on the 1st day of August, 1914, between the hours of 10 o'clock A. M. and 4 o'clock P. M., at the front door of the banking building of Richwood Banking and Trust Company, in the town of Richwood, Nicholas county, West Virginia, we will sell publicly to the highest bidder in writing, bonds of the Town of Richwood in the amount of twelve thousand dollars (\$12,000), payable in payments of six hundred dollars (\$600) each on December 15 of the years 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942 and 1943, with interest at six (6) per cent. per annum, payable annually on December 15 of each year, on all such bonds remaining unpaid.

Said bonds were authorized by an ordinance adopted by the Town Council of said Town of Richwood on the 4th day of June, 1914, and will be designated on the face thereof "Municipal Building Bonds," and the proceeds of the sale thereof will constitute a fund to be used in constructing a Municipal Building for the said Town of Richwood. Said bonds will be in form to be prepared by the attorney for said town. The terms of said sale will be cash. This 6th day of July, 1914.

A. L. CRAIG, Mayor of Richwood.
C. A. ORAHOOD, Recorder.

\$8500 Charlotte Co. (Va.) Bonds For Sale

Charlotte C. H., Va., July 20, 1914. The undersigned, acting as a committee of the Board of Supervisors of the County of Charlotte, Va., offer for sale \$8500 of Charlotte County Bonds to provide for the building of a new Jail, under the law in such case made and provided. Said bonds consist of 17 coupon bonds of \$500 each and accumulated interest from date of bonds, bonds bearing interest at the rate of 5 per cent. per annum, payable semi-annually, principal and interest payable at the office of the County Treasurer of Charlotte County, Charlotte Court House, Va. No bids received later than noon August 25, 1914. Said bonds dated July 1, 1914, run 40 years, with the option of payment in 20 years. A certified check of \$200 must accompany each bid. The committee reserves the right to reject any and all bids.

P. N. MORGAN, J. C. CARRINGTON, Committee.

\$40,000 5% Good Roads Bonds

Halls, Tenn. Sealed bids solicited by the Commissioners of Good Roads District No. 4 of the State of Tennessee on \$40,000 good roads, coupon 5 per cent. annual, bonds, maturing 30 years, but containing an option provision making them redeemable after ten years, to be opened at 2 o'clock Saturday, August 8, 1914, in Halls, Lauderdale County, Tennessee.

A certified check for \$500 must accompany bid. J. M. PARRISH, Chairman Board of Commissioners.

City of Pensacola (Florida) \$400,000 4½% Dock and Belt Railroad Improvement Bonds

Sealed bids will be received by the Board of Commissioners of the City of Pensacola, Florida, from July 15, 1914, until August 15, 1914, at 12 o'clock noon, for the purchase of all or any part of four hundred thousand dollars (\$400,000) City of Pensacola Dock and Belt Railroad Improvement Bonds, which shall be paid for upon delivery to the purchaser on the 1st day of September, 1914, at any national bank in the city of Pensacola which the purchaser shall designate in his proposal. Said bonds being of the denomination of one thousand dollars (\$1000) each, dated October 1, 1913, maturing October 1, 1943, numbered 1 to 400, both inclusive, bearing interest at the rate of 4½ per cent. per annum, payable semi-annually, and the principal and interest are payable in gold coin at the office of the United States Mortgage & Trust Company, in the city and State of New York. The bonds will be engraved under the supervision of and certified as to genuineness by the United States Mortgage & Trust Company of New York, and the legality of the bonds will be approved by Messrs. Dillon, Thomson and Clay, attorneys, of New York, whose opinion as to the legality, or a duplicate thereof, will be delivered to the purchaser or purchasers.

Each bid must be made on a blank form of proposal furnished by the City of Pensacola, and must be accompanied by a duly certified check on one of the banks of the city of Pensacola for 2 per cent. of the par value of the bonds bid for. The bid must be in a sealed envelope marked "Bid for Dock and Belt Railroad Improvement Bonds," and addressed to the Board of Commissioners of the City of Pensacola, Florida, and no bid will be considered that is not received at the office of the Mayor at the City Hall in the city of Pensacola by or before 12 o'clock noon on August 15, 1914, at which time and place all bids will be publicly opened and read.

The right is reserved to reject any and all bids. For further particulars address the United States Mortgage & Trust Co. of the undersigned.

A. GREENHUT, Mayor of the City of Pensacola, Florida.
Attest: C. W. EGGART, City Clerk.

Bonds For Sale

Rockville, Md. The County Commissioners for Montgomery County, Maryland, will receive sealed bids for the purchase of 15 Montgomery County Bonds of \$1000 each up to 12 o'clock noon on the 28th day of July, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash if, in the opinion of the said County Commissioners, such highest bid be an adequate price for said bonds.

These bonds are in a series of 15 bonds of \$1000 each, aggregating \$15,000 and numbered from one to fifteen, both inclusive, and one of said bonds being numbered one, and being payable one year after date thereof, and one of said bonds in order of their number being payable each year until the entire issue of fifteen are fully paid.

These bonds bear interest at the rate of 5 per centum per annum, said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum. The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County at Rockville, Maryland.

Each bid must be accompanied with a certified check for Two Hundred Dollars, made payable to the County Commissioners of Montgomery County, Maryland. RICHARD T. WHITE, JR., President of the Board of County Commissioners for Montgomery County, Maryland. BERRY E. CLARK, Clerk to the County Commissioners for Montgomery County, Maryland. JOHN A. GARRETT, Solicitor.

\$100,000 Bridge Bonds

State of Mississippi, Chickasaw County.

Houston, Miss.

Notice is hereby given that the Board of Supervisors of said county and State will receive sealed bids until 12 o'clock M. on Monday, the 31 day of August, 1914, for the purchase of one hundred thousand dollars (\$100,000) in bonds of the county for the purpose of constructing bridges of the county. Said bonds to mature in 20 years, bearing interest at a rate not exceeding 6 per cent. per annum, payable semi-annually on the first day of February and August in each year. Said bonds to be dated August 1, 1914, and shall be non-optional. Such bonds to be lithographed with interest coupons attached, and shall be in denominations of \$500 each, and shall be prepared and issued in accordance with Section 11 of Chapter 234 of the laws of Mississippi, 1912. That bids will be received on said bonds bearing 5 per cent. 5½ per cent. and 6 per cent. interest, and that bids will be received on said bonds in lots of \$25,000, and then on the entire issue. That the successful bidder shall furnish blank lithographed bonds without extra cost to the county, each bid to be accompanied by certified check for \$500. That in the event satisfactory bids are not received, that the same will be sold at public outcry. The Board reserves the right to reject any and all bids.

Witness my signature this the 10th day of July, 1914.

H. E. BRANNON, Chancery Clerk.

Bonds For Sale

Rockville, Md. The County Commissioners for Montgomery County, Maryland, will receive sealed bids for the purchase of 22 Montgomery County Bonds of \$500 each up to 12 o'clock noon on the 28th day of July, A. D. 1914, at which time the bids will be opened by said Commissioners and the sale consummated to the highest bidder for cash if, in the opinion of the said County Commissioners, such highest bid be an adequate price for said bonds.

These bonds are in a series of 22 bonds of \$500 each, aggregating \$11,000 and numbered from one to twenty-two, both inclusive, and two of said bonds being numbered one and two, both being payable one year after the date thereof, and two of said bonds in order of their number being payable each year until the entire issue of twenty-two are fully paid.

These bonds bear interest at the rate of 5 per centum per annum. Said interest being payable semi-annually on the 1st day of August and the 1st day of February in each year until the payment of the principal sum.

The principal and interest being payable at the Farmers' Banking & Trust Company of Montgomery County at Rockville, Maryland.

Each bid must be accompanied with a certified check for Two Hundred Dollars, made payable to the County Commissioners of Montgomery County, Maryland. RICHARD T. WHITE, JR., President of the Board of County Commissioners for Montgomery County, Maryland. BERRY E. CLARK, Clerk to the County Commissioners for Montgomery County, Maryland. JOHN A. GARRETT, Solicitor.

\$58,000 Pulaski Co. (Va.) School District No. 4 Bonds For Sale

Notice is hereby given that the School Board of Pulaski School District (No. 4) of the County of Pulaski, Virginia, will receive bids at the office of J. F. Wysox, Treasurer of Pulaski County, until twelve o'clock noon on Monday, August 3, 1914, for the purchase of \$58,000 of bonds of said school district; said bonds to be coupon bonds of the denomination of \$500 each, dated September 1, 1914, bearing interest at the rate of five per cent. per annum, interest payable semi-annually; \$5000 of said bonds mature in five years, \$8000 in ten years, \$10,000 in fifteen years, \$10,000 in twenty years, \$12,000 in twenty-five years, and \$13,000 in thirty years; said bonds being issued for school improvement in said district.

Certified check for \$1000 must accompany each bid as an evidence of good faith. Right reserved to reject any and all bids.

For further information apply to J. F. WYSOX, Treasurer Pulaski County, Pulaski, Virginia.

Sale of \$1,000,000 6% Drainage Bonds

Under authority of and in compliance with the provisions of the Act of the Legislature of Florida, Session 1913, Chapter 6456, Laws of Florida, the Board of Commissioners of Everglades Drainage District of Florida propose to offer for sale one million dollars six per cent. Drainage Bonds, and will receive sealed bids at their office in the State Capitol, Tallahassee, Florida, for the purchase of same on or before 10 o'clock A. M. Thursday, August 20, 1914.

The Board reserves the right to reject any or all bids. For full information address J. STUART LEWIS, Secretary, Tallahassee, Fla.

PROPOSALS

SEWERS

WATER-WORKS

ELECTRIC LIGHT PLANTS

BRIDGES

PAVING AND GOOD ROADS

State Highway

STATE OF MARYLAND,
STATE ROADS COMMISSION,
601 Garrett Building,
Baltimore, Md.

NOTICE TO CONTRACTORS.

Sealed proposals for building 10 sections of State Highway, aggregating about 42.18 miles in length, as follows:

Contract No. A-11—ALLEGANY COUNTY: One section of road from near Cumberland to Nave's Farm Road, about 1.74 miles in length. (Resurfacing.)

Contract No. BC-18—BALTIMORE CITY: One section of Cathedral and Liberty Sts. from near Monument St. to Baltimore St., about .54 miles in length. (Sheet Asphalt and Granite Block.)

Contract No. D-8—DORCHESTER COUNTY: One section of road from Cambridge to the Church Creek Road, about 5.85 miles in length. (Macadam or Concrete.)

Contract No. 0246—FREDERICK COUNTY: One section of road through Middletown, about 1.36 miles in length. (Macadam or Concrete.)

Contract No. P-13—PRINCE GEORGE'S COUNTY: One section of road from Meadows to Camp Springs, about 3.03 miles in length. (Macadam, or Concrete, or Gravel.)

Contract No. S. M.-8—ST. MARY'S COUNTY: One section of road from St. Mary's City to Ridge, about 6.74 miles in length. (Gravel Surfacing.)

Contract No. S. M.-10: One section of road from Leonardtown to Great Mills, about 10 miles in length. (Gravel Surfacing.)

Contract No. 068—SOMERSET COUNTY: One section of road from Carroll's Corner to Marion, about 5.32 miles in length. (Macadam or Concrete.)

Contract No. W-7A—WASHINGTON COUNTY: One section of road from Licking Creek to Millstone, about 4.1 miles in length. (Macadam or Concrete.)

Contract No. W-7B: One section of road from Millstone to Hancock, about 3.5 miles in length. (Macadam or Concrete.)

Will be received by the State Roads Commission at its office, 601 Garrett Building, Baltimore, Md., until 12 M. on the 4th day of August, 1914, at which time and place they will be publicly opened and read.

Bids must be made upon the blank form contained in the book of specifications. Specifications will be furnished by the Commission upon application and cash payment of \$1 for each contract, as hereafter no charges will be permitted.

No bid will be received unless accompanied by a certified check for the sum of five hundred (\$500) dollars, payable to the State Roads Commission.

The successful bidder will be required to give bond and comply with the Acts of the General Assembly of Maryland respecting contracts. The Commission reserves the right to reject any and all bids.

By order of the State Roads Commission this 15th day of July, 1914.

O. E. WELLER,
Chairman.

WM. L. MARCY,
Secretary.

Paving, Curbing, Etc.

Grenada, Miss.

Sealed proposals will be received by the City of Grenada, Miss., at the City Recorder's office until August 3, 1914, for the following approximate items:

14,000 sq. yds. street paving with vitrified brick, wood block, concrete and bitulithic.
4000 lin. ft. concrete curb.

All necessary grading, water and sewer connections.

Proposals to be made on blanks furnished by the City Recorder and to be accompanied by certified check for \$1500. Specifications and forms may be obtained from City Recorder. The Board of Mayor and Aldermen reserve the right to reject any or all bids.

L. B. JAMES,
City Recorder.

Road Grading

Marshall, N. C., July 7, 1914.

Sealed bids for the grading of approximately 10.2 miles of road, divided into four sections leading out from Marshall and Hot Springs, will be received by the Madison County Highway Commission at their office in Marshall, N. C., up to 12 o'clock noon July 23, 1914. Profiles and specifications may be seen in the office of the County Road Engineer, Marshall, N. C. The Highway Commission will furnish bidders with a blank form of proposal. No bid will be considered unless submitted on such form. The Highway Commission reserves the right to reject any and all bids. For further information address

J. B. CLINGMAN,
County Road Engineer.

Paving Bids

Mooresville, N. C.

Mooresville, N. C., will receive sealed bids on 9000 yards bituminous paving, concrete base and curb, until 2 P. M. August 24, 1914. Plans and specifications can be obtained by depositing five dollars (\$5) with Adlai Osborne, Engineer, 414 Realty Bldg., Charlotte, N. C., or can be inspected at this office. The right to reject any and all bids is hereby reserved.

E. C. DEATON,
City Clerk and Treasurer.

Street Improvements for the Town of Graham, N. C.

Bids are invited by the Street Commission of the Town of Graham, N. C., until July 28th, 1914, for furnishing material, labor and appliances, and grading, paving or otherwise improving the streets of said town, as far as may be done with the proceeds of the recent bond issue of \$50,000.

Specifications, forms of bonds, contract, etc., may be had on application to the Chairman of the Street Commission, enclosing a check for \$2.50, which will be returned upon the receipt of said specifications in good condition.

All bids must be accompanied by a certified check in the sum of \$250.00, which will become a forfeit to the Town of Graham if the successful bidder fails to enter upon contract and give bond within ten days of the award. As soon as the contract is closed, all checks will be returned.

The successful bidder will be required to execute a bond in the sum of \$10,000, with a satisfactory guaranty company, to insure faithful performance of all conditions of the contract. The Street Commissioners reserve the right to reject any and all bids.

WILLIAM I. WARD,
Chairman of Street Commission,
Graham, N. C.

J. N. AMBLER,
Consulting Engineer, Winston-Salem, N. C.

Road Construction

BIDS RECEIVED UNTIL 1 O'CLOCK P. M. JULY 30TH, 1914.

Sealed proposals will be received at the County Clerk's Office, Princeton, W. Va., for furnishing material, grading, masonry (except substructure of steel bridges) and macadam complete on the following roads:

Virginia-West Virginia State line near Pocahontas to Coopers, about 2 1/2 miles.

Bramwell to Rock, about 8 miles.

Bramwell to Bluefield, about 8 miles.

Princeton to Athens, about 6 1/2 miles.

Carr Schoolhouse to mouth of Sand Lick, about 7 miles.

Proposals will be considered separately and collectively, and each proposal must be accompanied by a certified check payable to the County Court of Mercer county for the sum of \$500.

The right is reserved to reject any or all bids. Proposals must be submitted in a sealed envelope, so marked as to indicate the nature of its contents without being opened.

If forwarded by mail, this envelope should be placed in another addressed to Clerk of Mercer County Court.

For further information apply to W. I. LEE, Chief Engineer Macadam Road Construction, Princeton, W. Va.

Paving and Drainage

(Unofficial Advertisement.)

Sealed bids will be received by the Mayor and City Council of Miami, Fla., about August 6 (exact date announced later) for the paving of certain streets and the necessary drainage for the same, of vitrified pipe and reinforced concrete sewers. Bids will be received on asphaltic concrete, vitrified brick, bitulithic, creosoted wood block and asphalt block; approximate yardage, 95,000. Plans and specifications ready about July 25.

B. H. KLYCE, Engineer,
Miami, Florida.

WATERWORKS AND SEWERS

Notice to Sewer Contractors

Blytheville, Ark.

Sealed proposals will be received by the Board of Commissioners of Sewer District No. 1, Blytheville, Ark., until 1 P. M. July 30, 1914, and then publicly opened. For the construction of a complete sanitary sewer system, including sewage treatment works, consisting of the following quantities:

6000 feet of 15" sewer cut 8'-18".
3500 feet of 12" sewer cut 8'-12".
3000 feet of 10" sewer cut 4'-10".
5200 feet of 8" sewer cut 4'-10".

60 Manholes.
60 Flush tanks.
Pumping pit.

Electrical driven pumping outfit (2 units.) Sewage treatment works consisting of contact and sand filtration beds with all necessary apparatus.

All work to be absolutely watertight and free from all infiltration of ground water. The above quantities are approximate and are subject to change.

Plans can be seen and specifications procured after July 15, 1914, in the office of A. C. Lange, Secretary, Board of Commissioners, Blytheville, Ark., and at the office of R. C. Huston, chief engineer, Room 630-32, Exchange Building, Memphis, Tenn.

No bid will be received unless accompanied by a certified check in the sum of \$3000. The right is reserved to reject any and all bids. The legal proceedings pertaining to the issuance of the bonds have been completed and approved, and the contract will be awarded subject to the sale of the bonds.

BOARD OF COMMISSIONERS.
T. J. MAHON, President.
W. N. FIELDS.
A. C. LANGE, Secy. and Treas.
A. G. LITTLE, Attorney.
R. C. HUSTON, Chief Engineer.

Water-Works System

New Boston, Texas.

Sealed bids will be received by the City Council of the City of New Boston, Texas, until 8 P. M. Monday, August 3, 1914, and opened and publicly read immediately thereafter, for furnishing all materials therefor and building complete a water-works system for the said city. Said system will include the drilling of a battery of shallow wells, the laying of about 3800 feet of 6-inch and 1350 feet of 4-inch C. I. water pipe. Also, 4800 feet 2-inch galvanized-iron pipe, 6 hydrants and 6 gate valves, two oil engines and triplex pump and power-house, and one 100-foot 50,000-gallon-capacity water tower and tank, all completely installed ready for operation.

Plans and specifications can be had from the engineers upon payment of \$5 for same.

The City Council reserves the right to reject any or all bids.

O. B. PIRKEY, Mayor.
O. H. PROCTOR, City Clerk.
NACHEL & PETERSEN, Engineers,
Mustogee, Oklahoma.

MISCELLANEOUS

Gasoline Truck

Wanted—To buy for road purposes, a gasoline truck, five to six ton carrying capacity, with body sufficiently large to carry twenty-five men, and also to be used for the purpose of scarifying the roads, and at the same time to pull a road machine with an eighteen-inch blade twelve feet long. Apply to A. Huber, Chairman County Commissioners, Moultrie, Ga.

Creek Drainage

Sealed bids will be received at Courthouse, Salisbury, N. C., by the Board of Drainage Commissioners for Grant's Creek Drainage District, Rowan county, North Carolina, on Monday, August 3d, at ten o'clock A. M., for clearing the right of way and cutting a ditch along Grant's Creek about 14 1/2 miles long, and containing about 491,800 cubic yards of material.

Ditch to be complete within sixteen months from August the 1st. Plans and specifications on file in the Clerk's office, Salisbury, N. C.

Certified check for \$500 required. The right to reject any and all bids reserved.

C. M. MILLER, Engineer and Supt.,
Salisbury, N. C.

July 15, 1914.

Dredge-Boat Work, Etc.

NOTICE TO CONTRACTORS.

Union City, Tenn., July 7, 1914.

Sealed bids will be received until noon of Tuesday, the 4th day of August, 1914, for approximately 446,700 cubic yards of ditch work with floating dredge and approximately 21,000 cubic yards with teams, and for clearing approximately 125 acres of right of way. Will entertain bids for all or any part of said work. Bids on work as a whole or for dredge-boat yardage must, as a guarantee of good faith in entering into contract, be accompanied by certified check for one-tenth (1/10) of amount so respectively bid; bids for team work yardage and clearing, as a whole, must likewise be accompanied by certified check for \$1000; bids on team work yardage and clearing separately must be accompanied respectively by certified check for \$500. Right to reject any and all bids reserved by Board of Directors. Specifications can be had by applying to W. C. Kelly, engineer, Union City, Tenn. Work to be completed in one year.

HARRIS FORD DRAINAGE DIST. No. 3,
J. L. PICKLE,
Secretary of the Board of Directors.

Marine Railway—Bridges—Spillway

SPRING LAKE DRAINAGE AND LEVEE DISTRICT, TAZEWELL COUNTY, ILLINOIS.

Sealed bids will be received until 11 o'clock A. M. July 24, 1914, by the Commissioners of the Spring Lake Drainage and Levee District, at the office of Attorney J. M. Powers, in Pekin, Illinois, covering the following work:

First—A Marine Railway for transferring boats across the drainage district levee, including the foundations, tracks, structural steel work, and gasoline-engine-driven power plant.

Second—A Girder Draw Bridge and an I-Beam Highway Bridge.

Third—A Sheet Piling Spillway with brush and rock apron.

For further information address Harman Engineering Co., Civil, Mechanical and Electrical Engineers, Peoria, Illinois.

Manual Training Equipment

Sealed bids will be received up to 8.30 o'clock P. M. Tuesday, August 4, 1914, for complete equipment for installation of Manual Training in Charlotte High School.

Specifications may be had upon application to A. H. Wearn, Purchasing Agent, Charlotte, N. C.

A certified check equal to 5 per cent. of the bid must accompany each and every bid, and the right is reserved to accept or reject any or all bids, or any part of a bid.

BOARD SCHOOL COMMISSIONERS,
CITY OF CHARLOTTE.
By A. H. WEARN,
Secretary and Treasurer.

Steel Bridge

Sealed bids will be received up to and until 12 o'clock noon on Thursday, July 30, 1914, for a steel bridge to be built by the joint Boards of County Commissioners of Gaston and Mecklenburg Counties, North Carolina, over Catawba River at Mt. Holly, N. C.

Bridge consists of two spans over the river 200 feet long, with steel approach at each end. A clear roadway or 16 feet. Bridge floor to be 35 feet above water. Substructure concrete and cylinder piers. Appropriation for work, \$20,000.

Plans and specifications are on file and may be seen in the office of the Board of County Commissioners in Mecklenburg County Courthouse at Charlotte, N. C., and in the office of the Board of County Commissioners of Gaston County in the Courthouse at Gastonia, N. C.

Bids will be received by the Boards of Commissioners of Gaston and Mecklenburg Counties in joint session at the site of the new bridge, and opened by them after 12 o'clock noon of the above date.

Right is reserved to reject any or all bids.

Chairman Gaston County Comms.
W. M. LONG,
Chairman Mecklenburg County Comms.

School Building

NOTICE TO CONTRACTORS.

Sealed bids will be received from the general contractors on or before 11 o'clock A. M. Monday, August 24, 1914, at Tavares, Fla., for furnishing material and labor necessary to construct a two-story-and-basement brick and frame school building; also a one-story-and-basement brick and frame auditorium building, for the School Trustees at Leesburg, Florida.

A certified check of \$500 must accompany each bid, said check to be made payable to Wm. T. Kennedy, Secretary. Surety bond in the sum of 35 per cent. of contract price in some surety company, approved by the Board of Public Instruction, will be required of the successful contractor for the completion of the work.

Separate estimates to be made on each building, but tendered in the same letter and under the same check. Plans and specifications can be seen at the office of W. H. Carr, Architect, Leesburg, Florida, and can be procured by sending a certified check for \$25, payable to him, as a guarantee that a bid will be submitted, \$25 of which will be returned when said plans and specifications are returned in good condition.

A sample of the brick proposed to be used for all outside work must be submitted at time of opening bids.

Bids should be marked "Bid for School Building and Auditorium at Leesburg, Florida." Address

WM. T. KENNEDY, Secretary,
Unatilla, Florida.

Metal Culverts

Wanted—Bids for immediate shipment on full circle corrugated galvanized metal culverts. Quote prices f. o. b. factory of manufacturer, and delivered prices at Savannah, Ga., stating guaranteed analysis of metal and weight per lineal foot of each culvert, which must be guaranteed. Bidder to furnish drawing of connecting bands. All bids to be submitted to J. C. Fleming, Agent, P. O. Box 154, Columbia, S. C., who reserves the right to reject any or all bids.

100 pieces 16 gauge, 10-inch diameter, each piece 10 feet long, total 1000 feet.

100 pieces 16 gauge, 12-inch diameter, each piece 10 feet long, total 1000 feet.

100 pieces 16 gauge, 15-inch diameter, each piece 10 feet long, total 1000 feet.

100 pieces 16 gauge, 18-inch diameter, each piece 10 feet long, total 1000 feet.

100 pieces 16 gauge, 20-inch diameter, each piece 10 feet long, total 1000 feet.

60 pieces 15 gauge, 24-inch diameter, each piece 10 feet long, total 600 feet.

10 pieces 15 gauge, 30-inch diameter, each piece 10 feet long, total 100 feet.

10 pieces 14 gauge, 36-inch diameter, each piece 10 feet long, total 100 feet.

70 pieces 16 gauge, 10 connecting bands.

70 pieces 16 gauge, 12 connecting bands.

70 pieces 16 gauge, 15 connecting bands.

70 pieces 16 gauge, 18 connecting bands.

70 pieces 16 gauge, 20 connecting bands.

40 pieces 15 gauge, 24 connecting bands.

7 pieces 15 gauge, 30 connecting bands.

7 pieces 14 gauge, 36 connecting bands.

J. C. FLEMING, Agent,
P. O. Box 154, Columbia, S. C.

Power Plant Equipment

Sealed proposals, addressed to the Mayor and Board of Town Commissioners of Scotland Neck, N. C., will be received at the Mayor's office at Scotland Neck up to 12 o'clock noon on Thursday, the 23d of July, 1914, for furnishing the following:

One 400-horse-power 200 R. P. M. Steam Engine.

One 250 K. W. Engine Type 2300-volt Alternator with Exciter and Switchboard.

One 250 H. P. Water-Tube Boiler, erected.

No other apparatus to be considered at this time, but separate tenders will be received on the several items.

Proposal forms and further information may be obtained from the Engineer at Durham, N. C.

Proposals will be opened in the presence of those interested, but the Board reserves the right to reject any and all bids.

By order of the Board.

L. R. MILLS, JR., Supt.,
Scotland Neck, N. C.

Engineer,
WM. M. PIATT,
Durham, N. C.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Pumping Machinery for Phosphate Mining.

Pumping machinery, consisting of a horizontal Corliss cross compound crank and fly-wheel high-duty pumping engine, having capacity of 5000 gallons per minute against 150 pounds working pressure, has been purchased by the Phosphate Mining Co. for its plant at Nichols, Fla., from the Epping-Carpenter Pump Co. of Pittsburgh, Pa.

Opens Sales Office in Detroit.

The Union Drawn Steel Co. of Beaver Falls, Pa., has opened sales offices in the Dime Bank Bldg., Detroit, Mich., for the territory of which Detroit is the center, with Walter J. Bothwell, formerly assistant general manager of sales, as district sales manager. The company's products consist of Bessemer, open hearth, crucible and cold die rolled steel in round, flat, square, hexagon and sheet shapes.

Ball & Ball to Manufacture Carburetors.

Frank H. Ball and Frederick O. Ball, his son, will engage in the manufacture and sale of carburetors under the firm name of Ball & Ball, with headquarters in Detroit, Mich. Frank H. Ball retired from the engine business last year, and his son recently resigned from the general management of the American Engine & Electric Co. of Bound Brook, N. J.

Activity in Rubber Goods.

Along with the doubling of its tire business, the Goodyear Tire & Rubber Co. of Akron, O., reports increased business in its mechanical rubber goods department, with an increase in its output of mechanical goods, including belting, hose, packing, valves, etc., of 333 per cent. in 1913 over 1912, and an increase for the first quarter of 1914 over the corresponding period of 1913 of 480 per cent. In the first four fiscal months of 1914 more Goodyear mechanical goods were sold than in all of 1913.

A Southern Firm's Canadian Contract.

A recent illustration of the activity of Southern firms for business outside of the South is shown by the Dow Wire & Iron Works of Louisville, Ky., in a contract secured for ornamental iron work for the city of Maisonneuve, Canada, amounting to \$5165. The company manufactures artistic, ornamental and structural steel and bronze work for banks, elevator cabs and enclosures, iron and wire fencing, etc.

A Correction.

The Hughes Specialty Well Drilling Co., Charleston, S. C., calls attention to the fact that it has the South Atlantic States agency for Deane's Glendora triple plunger artesian well pumps only, and not for the general line of pumps manufactured by the Deane Steam Pump Co. of Holyoke, Mass., as might be construed from the meaning of the title, "Agency for Deane Steam Pumps," in an industrial news item recently published in the Manufacturers Record.

Accurate Cost-Keeping for Cement Plants.

The auditing department of the Security Cement & Lime Co. of Hagerstown, Md., after making extensive investigation of methods of cost-keeping in use by cement plants of the country, has adopted the standard form of cost-keeping which was recently arrived at by a special committee of the Association of American Portland Cement Manufacturers. It has been claimed that the large number of reversals in the cement industry during the past seven years has largely been due to the fact that many companies did not know what their operating costs were.

Southern Milling Machinery Contracts.

Recent contracts received by the Nurdyke & Marmon Co., Indianapolis, Ind., for flour mill machinery equipment in the South include machinery equipment for a 150-barrel mill, together with plans for a three-story

and basement mill building for A. S. & E. M. Hall of Fordtown, Tenn.; a 30-barrel flour mill outfit for W. P. McConnell of Gate City, Va.; a 175-barrel flour mill outfit for the Farmers' Manufacturing & Grain Co., Mt. Airy, Md.; a 30-barrel capacity flour mill machinery equipment for T. O. Singleton of Pamplin, Va., and other equipment consisting of roller mills, sifters, reels and packers for improvements to mills throughout the country.

Opens Southern Sales Offices.

In order to facilitate the handling of its Southern business, the Asbestos Protected Metal Co. of Beaver Falls, Pa., has opened sales offices in the following cities in charge of district sales managers: 814 Howard Ave., New Orleans, La., Fritz Jahnecke; 417 American Trust Bldg., Birmingham, Ala., N. W. Tredinnick; 2500 Main St., Dallas, Tex., W. A. Browning; 120 Avenue C, San Antonio, Tex., Turner Roofing & Supply Co.; Austin and Commerce Sts., Houston, Tex., W. L. Macatee & Sons, and El Paso, Tex., Neff-Stiles Company. Illustrations and description of asbestos protected roofing and siding, with estimating data and price lists, are contained in bulletins No. 17 and No. 53, issued by the company.

Dixie Brick & Tile Co. Reorganized and Capacity Doubled.

Extensive improvements, including new mechanical drying and burning equipment, and machinery for making hollow building or fireproof tile, have been made by the Dixie Brick & Tile Co. of Puryear, Tenn., which was recently reorganized with increased capital stock. The capacity of the plant has been increased from 25,000 to 50,000 brick per day. Mechanical equipment, consisting of face brick cutter, manufactured by E. M. Freese & Co., Gallon, O.; machine front and dies by the American Clay Machinery Co., Bucyrus, O., and fan and dryer equipment by the Crawford & McCrimmon Co., Brazil, Ind., has been installed, and five 30-foot round down draft kilns, using waste heat drying system, are to be installed. A conveyor system and hoisting outfit for the pit have been purchased, and the company states a steam shovel will be purchased in the near future. A new clay pit of high-grade raw material, containing ball clay, wad clay, Sagger clay and a fine vein of silica fire-clay, has been opened up by the company. A complete line of high-grade face brick in impervious and semi-impervious whites, grays, creams, buffs, browns and goldens, in both smooth and rough faced brick, is made. James P. Williams, consulting engineer, with offices at 2803 N. King's Highway, St. Louis, Mo., has had charge of the improvements and will temporarily manage the plant. The company invites correspondence from building-material agents in the South.

"Maypul" Steel Developed by Frick Company.

A new steel composition, known as "Maypul" steel, for making ammonia compressors, ammonia valves, fittings, etc., which has been produced after extensive tests by the Frick Company of Waynesboro, Pa., was particularly investigated and discussed at the annual home meeting of the branch office managers, engineers and executives of the company, held at the new offices. Special interest was shown in the marked improvements for manufacturing ice-making and refrigerating machinery lately developed and installed by the company. One of the features was the inspection of the factory and a trial of the improved devices, including two large vertical machines of 350 tons capacity each, having cross-compound engine, which was being erected at the time, and the ox-weld and electric-weld processes, combined with special machinery, which enables the company to produce a high grade of continuous pipe and coil work.

Activity in Foreign and Home Trade

In view of the dull conditions reported by many, it is pleasing to find a note of optimism and a story of activity from some

leading concerns. The Terry Steam Turbine Co. of Hartford, Conn., sounds such a note in a report that it will take from four to five months to complete orders now on hand, although to properly take care of this large amount of business it has installed new machine tools, increasing the capacity of the plant by about 25 per cent., and is now employing on full time a larger number of men than heretofore. The company is finishing an order for 19 turbines for the Italian Government which was received about a year ago. The success of the installations made resulted in the company receiving an order for eight more in May, and now it has an additional order for 24 turbines from N. Odero & Co., Sestria, Ponente, Italy. Other foreign orders recently received include a number for use in Canada, Cuba, Mexico and South America. An order for 20 turbines for the new generating station of the Philadelphia (Pa.) Electric Co. has also been received.

TRADE LITERATURE.

Missouri Number of "The Yellow Strand."

The Broderick & Bascom Rope Co., 805 N. Main St., St. Louis, Mo., in issuing "The Yellow Strand" for July, have made a Missouri number of it. This publication speaks of the products of Missouri and its natural resources, and has a number of illustrations showing some of the plants throughout the State, and also an illustrated article on the reclamation of wet land. It is an interesting publication from a Missouri standpoint, while not overlooking the merits of Yellow Strand power steel rope.

"Scotch" Marine Internally Fired Boilers.

Internally fired Scotch marine boilers, with built-in waterbacks, constructed by the Murray Iron Works Co. of Burlington, Ia., are illustrated and described in a pamphlet recently issued by the company. The pamphlet contains a brief sketch of the "Scotch" type of marine boiler, and describes the design, material, workmanship and advantages of the Scotch marine boiler with built-in waterback. The company states that it builds boilers from 2 to 500 horsepower for any pressure.

Side Head Boring Mill.

The Pratt & Whitney Company of Hartford, Conn., invites attention to the side-head boring mill illustrated and described in a special catalogue recently issued by the company. The power and stability, range, operating requirements, durability, workmanship, etc., of the machine are explained, and a list of branch offices and agents is given on page 2 of the catalogue. A separate department and engineering force, devoted to this type of machine, are maintained at the works, and the company promises prompt attention to inquiries.

C. & L. Centrifugal Pumps.

A pamphlet, which is edited as an emergency forerunner of a complete catalogue of C. & L. centrifugal pumps, has been issued by the C. & L. Pump Co. of Newark, N. J., designer and builder of improved centrifugal pumps. The pamphlet contains construction details and illustrations of several types of pumps manufactured by the company, together with rules for determining diameter and speed of pulleys, formula for finding horse-power necessary to accomplish desired quantity of work, water-pressure tables and other useful data.

Dry Kilns for Timber Products.

An attractively-illustrated catalogue on dry kilns, which will prove interesting to manufacturers of wood products, has been issued as Bulletin No. 29, Series 1, by the American Blower Co. of Detroit, Mich. The company announces that it is confining its products as in the past to tried and proven ideas in the manufacture of kilns, and, while investigating the many new schemes and inventions which have been proposed, it has adhered strictly to the making of kilns to principles which are known to be sound and successful.

Lea-Simplex Cold Cutting-off Saws.

Illustrations, description of construction details, specifications and other information on Lea-Simplex cold cutting-off saws, as designed and manufactured by Lea Equipment Co., Philadelphia, Pa., are contained in Bulletin "D," issued by the Earle Gear & Machine Co., Philadelphia. The "Simplex" hand grinding and beveling machine made by the company is illustrated and described in the bulletin, and a list of users of the Lea-Simplex products is given. The use of both solid saw blades and inserted

tooth blades and other improvements have been made in the 1914 model.

Chart for Converting Foreign and United States Money Values.

A handy chart for converting foreign and United States money values has been developed by C. S. Carpenter Drafting & Engineering Co., 49 Oakland Terrace, Hartford, Conn. It consists of a slotted card-board disc mounted on a circular scale, both marked with numbers so that by turning slot to section including known value the equivalent value may be read on the radial scales. This chart may be used for converting into dollars and cents the money values of the countries of Belgium, Bulgaria, Finland, France, Greece, Italy, Roumania, Servia, Spain, Switzerland and Venezuela.

Factory Sewing Machine Motors.

Type "F" direct-current factory sewing machine motors are illustrated and described in Bulletin No. 117, issued by the Robbins & Myers Co., Springfield, O. The motor, with controller and connecting rod, is illustrated, and the construction of the frame, armature, mounting, control equipment, end heads, bearings and brake is fully described. The motor is made for direct-current circuits only of 115 or 230 volts, and furnished in one size with an output of $\frac{1}{4}$ horsepower. A table of ratings giving horsepower and revolutions per minute for full speed load and weight of complete outfits with controls is also included in the bulletin.

Elevator Safeguards and Electric Dumbwaiters.

"The Certainty of Safety" is the title of an interesting catalogue on elevator safeguards issued by the Burdett-Rowntree Manufacturing Co., 119 W. 40th St., New York. It contains illustrations and description of the operation of safety devices for elevator gates and other safeguards for the protection of the operator and passengers. The safety interlock as applied to elevators operated by electricity, and the safety interlock for hydraulic elevators are illustrated and described in detail. This company also issues a 121-page book entitled "Electric Dumbwaiter Service," in which a brief outline of the advantages of electric dumbwaiter service of various types in different uses is given.

Atlas Passenger and Freight Elevators.

Electric, belt and hand elevators, manufactured by the Atlas Machine Co., Inc., of Louisville, Ky., are described and illustrated in a catalogue recently issued by the company. This catalogue contains information and illustrations of the Atlas direct connected electric passenger elevator with full magnet control-basement machine; direct connected electric passenger elevator with pilot wheel control-overhead machine, and control-basement machine; hand-power sheave elevators; combination belt and hand-power freight elevators; hydraulic plunger elevators, and elevator equipment and other products of the company.

Some of the Atlas Company's recent installations in the South are: Baum Bros., Jackson, Tenn.; E. R. Brown, S. Richmond, Va.; Grady Hotel, Miami, Fla. The company states it has recently completed its line of elevators and is now in a position to install every kind of passenger and freight electric elevators.

Western Intercommunicating Telephone Apparatus.

Helpful suggestions to the electrical dealer and contractor for the selection and installation of interior telephone systems are given in a catalogue on "Western Electric Interphones and Accessories," issued by the Western Electric Co., 463 West St., New York. The catalogue contains information on the construction and installation of "interphone systems, and shows illustrations, wiring diagrams and price lists of house telephone systems, private-line telephones, apartment house "inter-phones" and mechanical signaling systems. The three types of "inter-phones"—wall, desk and hand-set—are described in detail, and under each system are listed the types adapted for the service described. Accessories, including batteries and battery sets, hand sets, call bells and bell-ringing transformers, desk stands and stand arms, telephone wire and cable terminals, are also illustrated and described. A folder on the transformation of the ordinary bell or buzzer circuit into a practical working telephone system for office purposes has recently been issued in connection with interior telephone systems manufactured by the company.

Special Advertisements of General Interest.

VIRGINIA POLYTECHNIC INSTITUTE

—AND—
AGRICULTURAL AND MECHANICAL COLLEGE
BLACKSBURG, VIRGINIA

Thirteen degree courses in Agriculture, Engineering and Applied Science. Two-year course in Agriculture and Farmers Winter Courses. J. D. EGGLESTON, President.
Apply to Registrar for Catalogue.

Natural Gas Four Cents

for Industries at
HENRIETTA, TEXAS

Domestic Gas 20 cents. Three Railroads.
Water, Low Taxes, Healthful. Write
HENRIETTA BOOSTER CLUB

WISH TO CORRESPOND WITH

Party who can take Output of Box or Veneer
Factory of Medium Capacity

GEO. VINSON SHINGLE & MFG. CO.
BERWICK, LA.

COMMISSIONERS' SALE

By authority of its Stockholders, all the property, real and personal, of the
PIEDMONT PORTLAND CEMENT CO.

will be sold at public sale to the highest bidder, on

TUESDAY, AUGUST 4th, 1914. (Postponed from
July 1st, 1914)

At Portland, Polk County, Ga. (S. A. L. Ry.)

The property includes plant with all buildings, and complete, modern equipment for producing 500 barrels Portland Cement per day; 100 acres real estate; 32 operatives' houses; railroad sidings; full quarry, laboratory, and machine shop equipment; commissary and various other supplies, etc. Practically inexhaustible supply of high-grade raw material on property within 100 yards of plant; natural advantages for economical operation unsurpassed; favorable commodity freight rates already established. For further details, address

STOCKHOLDERS' SALES COMMISSIONERS

PIEDMONT PORTLAND CEMENT CO., 709 Austell Bldg., ATLANTA, GA.

Hosiery Mill Location

Will be glad to confer with interested parties
regarding excellent location for hosiery mill.
Splendid building now ready for machinery.

Healthful location, ample supply of labor, citizens
of community interested in seeing development
made.

Seaboard Air Line Railway

J. A. PRIDE, General Industrial Agent

NORFOLK, VA.

THE CONTROLLING INTEREST

IN AN

OLD ESTABLISHED BUSINESS FOR SALE

THE COMMON STOCK EARNED 50% IN 1913

Orders now on the books indicate a better business for 1914.

Owing to ill-health and reluctantly acting upon the urgent advice of his physician, a client has instructed me to offer for immediate sale the controlling interest in a

\$400,000.00

TEXTILE and GARMENT MFG. CORPORATION

This is the largest, most important and best-known concern in this line in the United States. Organized in 1900 with a capital of only \$500, it has grown to its present proportions of \$400,000 entirely out of earnings, besides paying very large cash dividends to its stockholders.

It has the most perfectly efficient organization in this country. The factory manager, sales manager, and heads of departments are all stockholders who have grown up in the business. They have made the past great success possible and are well equipped to make the future even better, so that the purchasers of this stock can step into a well-managed and very profitable business. This is a rare and unusual opportunity for a man to start his son in a very interesting, clean and profitable industry.

This business has just been appraised and the books audited by one of the best-known public appraisal and auditing companies. This report is open to inspection. The company has always enjoyed the highest commercial rating, and the highest bank and commercial references will be supplied upon request.

Full details upon request. Correspondence solicited and inspection of the plant invited.

T. S. SPRAGUE, Investment Securities,

1802 Ford Building, Detroit, Michigan.

Southern Lands

We are wholesalers of large tracts of lands suitable for colonization tracts, located in Georgia and Florida, also large Pine and Cypress timber lands. These are direct from owners that want to sell. Write us.

ALBERT FENDIG & CO.

Real Estate BRUNSWICK, GA.

Machine Shops and Foundry FOR SALE

Will accept sealed bids for our Machine Shops and Foundry, well equipped and well located; shop brick building, 60x110; foundry, 45x50; warehouse, 30x60. Sidetracks into the shops. Going business, and going to be sold in the next 30 days. Address

DRAWER No. 106, CHERAW, S. C.

COAL TAR FOR SALE

A Bargain

3000 one gallon square labeled and sealed tins of pure Coal Tar for sale at 10c. per tin, f. o. b. Richmond, Va. (Now packed and ready for shipment—17 tins in a barrel.)

American Mfg. & Refining Company
RICHMOND, VA.

USED MOTOR CARS AND TRUCKS

ASK FOR LATEST LIST TODAY

MAR-DEL MOBILE CO.
BALTIMORE, MD.

REFERENCES-BRADSTREET OR DUN.

ENGINES FOR SALE

1 14x18-inch Left-hand Armstrong Bros. Center Crank Throttling Engine, 72x14-inch band wheel, 75 H. P.; good condition.

1 28x48-inch Left-hand Greenwald Automatic Engine with glider frame, 16-foot by 31-inch band wheel, 300 H. P.; good condition. For prices and further particulars apply to

YELLOW POPLAR LUMBER CO. Coal Grove, O.

Bargains in Machinery and Supplies.

We Buy and Dismantle

FACTORIES

MILLS

MACHINE SHOPS

and all kinds of

INDUSTRIAL PLANTS

We are always in
the market to buy

Scrap Iron and Steel

OF EVERY KIND

FRANK SAMUEL

Harrison Building

15th and Market Sts. Philadelphia, Pa.

FOR SALE

Locomotive, 15-ton saddle-tank Porter, standard gauge, good order. Hoisting Engine, 3x12, reversible, with single drum and good boiler. Two launches: one 8 horse-power, 2-cylinder; other, 4 horse-power; Lathrop engines. Write

DAVIS LUMBER COMPANY
Orange Heights, Fla.

JAIL CELLS

FOR SALE

Four splendid Pauley Jail Cells with corridor between, all in good condition. Reason for selling, building new and larger jail.

Address the undersigned if interested.

J. W. BARNETT, City Engineer
ATHENS, GA.

Railroad Swing Bridge for Sale

An all-steel railroad swing bridge at present across River Rouge, near Delray, Mich., and may be seen in operation. Weight approximately 508,700 lbs. Approximate principal dimensions:
Length over all.....297'
Length center to center of end pins.....294'
Width over all.....17' 10"
Width in clear.....14' 5"
Height on working center at middle.....36'
Height on working center at ends.....25'
Height in clear at ends from top of rail.....18' 9"
Full specification details furnished on application to

THE SOLVAY PROCESS CO.

Purchasing Department SYRACUSE, N. Y.

Alternating Current Unit FOR SALE

1 250 K. V. A. 3-phase 60-cycle 230 or 440-volt 200 R. P. M. type ATB revolving field type General Electric Alternator, direct connected to a 17½x21 heavy-duty type piston-valve Buckeye automatic steam engine, fully equipped with exciter, panel board and instruments, condition guaranteed. Bargain price for immediate order.

National Machinery & Wrecking Co.

Electrical Department

1916 Scranton Road, Cleveland, Ohio

Steam and Gas Engines

FOR SALE

2-150 H. P. Automatic Horizontal Tandem Compound Steam Engines.

1-100 H. P. Gas Engine.

1-25 H. P. Gas Engine.

Salamanca Engine-Iron Co.

SALAMANCA, N. Y.

516 Empire Bldg., Pittsburgh, Pa.
422-E., 30 Church St., New York

Pumping Engine FOR SALE

10,000-gallon Barr Vertical Triple Expansion Crank and Flywheel Condensing Pumping Engine, 42" stroke, cylinders 28"-48"-72". Now in service under 350-foot head, 160 pounds steam pressure. Must be removed to make room for larger unit. Ready for delivery in October.

For particulars address

BURTON LOWTHER, Chief Engineer

Water Department City Hall, Kansas City, Mo.

FOR SALE AT A BARGAIN

We have just purchased at Sheriff's sale the following described property, new and in good condition, involving at carload lots approximately \$1800, and certainly not under \$1500: 175 rolls of Amazon 2 and 3-ply roofing; 7 barrels hydrated lime; 2½ tons Southern Egyptian plaster; 1 barrel Portland cement; 500 yards black nettle dip laths; 1 Patton hoist; 5 H. P. motor and 2 carriages; 30 rolls Barrett roofing paper; 35 rolls 2-ply Amazon roofing; 1 swinging cut-off saw; 1 iron drum and approximately 15 gallons creosote; 40 gallons paint; 1 wire cable, approximately 200 feet; 2500 red pressed brick; 50 rolls of 3-ply Amazon roofing. We will take \$600 cash for the entire lot to the first party offering same in cash. Address or see

Nelson & Holsberry, 403 Thiesen Building
Pensacola, Florida

MACHINERY BARGAINS

A few selections from our big stock of snags. Write for Free Complete List No. XB-213.

1000 tons "T" Ralls, 12 to 16 lbs.

No. XB-31. Worm Gear Freight Elevator, 2000 lbs. cap.

No. XB-32. Hoisting Engine, Dbl. Cyl. Drum, reversible link motion, 10 in. x 14 in.

No. XB-33. 200 Storage Tanks, capacities from 25 to 2000 gals.

No. XB-34. Sprague Electric 3-phase 20 H. P. Motor.

No. XB-35. 200 pieces 15-in. 42-lb. "I" Beams.

No. XB-36. Austin Jaw Crusher, 14-in. x 10-in. Opening.

HARRIS BROTHERS COMPANY, Owners
Chicago House Wrecking Company
35th and Iron Streets CHICAGO, ILL.

BOILERS

5 175 H. P. 72x20. 150 lbs. pressure.
225 H. P. Stirling. 150 lbs. pressure.
2 250 H. P. Heine, \$675 ea. 150 lbs. pressure.
1 345 H. P. Heine, Marine. 150 lbs. pressure.
1 350 H. P. Heine, \$1200. 150 lbs. pressure.

Also, Engines, Dynamos, Motors, Etc.
Write us for Second-hand Machinery.
HAROLD R. WILSON MACHINERY CO.
419 Pine St. Other Sizes St. Louis, Mo.

WAYNE REBUILT MACHINES

Furnished under plan carrying full protection to purchaser.

BAND-SAW MILLS—6' Fay-Egan, 7' Wayne, 8' Sinker-Davis.

CIRCULAR MILLS—Gaar-Scott, Knight, Russell, Sinker-Davis.

PLANERS—29 Single Surfacers, 10 Double Surfacers, 7 Single Planers and Matchers, 8 Double Planers and Matchers.

MOULDERS—40 machines from 4" up to 12" and of every type.

RESAWS—48", 64" and 66" Band; 24", 32", 36" and 42" Circular.

BOX MACHINERY—Printers, Lock Corner Machines, Nailers, etc.

COOPERAGE—Hoop, Stave and Heading Machinery for every need.

Seven hundred machines in stock.

Our "Wayne List," covering complete stock, mailed to anyone interested.

We save you money.

We give you a square deal.

WAYNE MACHINERY CO. FORT WAYNE, IND.
Successors to Hanna-Brackenridge Co.

FOR SALE**PIPE NEW & SECOND HAND**

Furnished with Threads and Couplings.
Suitable for All Practical Purposes

All Sizes In Stock Ready
for Shipment

Send us your inquiries and get our prices.
It will interest you.

Eagle Pipe Supply Company, Inc.
29 Howard Street N. Y. C.

SAW TABLES**SOME NEW—SOME USED**

- No. 4 with boring attachment "Sidney."
- 36"x36" wood frame mitre.
- No. 7 wood frame "Sidney."
- No. 7 1/2 Comb. and Dado "Williamsport."
- No. 3 "Sidney."
- double cut-off wood frame "Williamsport."
- 47"x46" cut-off "Greenlee Bros."
- No. 5 Comb. "Badger."
- double cut-off wood frame.
- No. 5 "Crescent."
- 35"x45" Universal "L. Power & Co."
- 36"x48" Comb. iron frame "Colladay."
- No. 8 with boring attachment "Sidney."
- No. 4 with boring attachment "Sidney."
- No. 4 Variety "Crescent."
- No. 1 "Crescent."
- 36"x48" iron tilting table "Colladay."
- No. 2 Comb. "Crescent."
- No. 3 wood frame rip "American."
- 36"x51 1/2" self-feed rip "Williamsport."
- 44"x55 1/2" self-feed rip "Williamsport-American."
- 35"x67" self-feed rip "Defiance Mach. Wks."
- 42"x69" self-feed rip "H. B. Mach. Co."

We also have a large stock of metal-working and contractors' machinery, steam and electric power equipment.

L. F. SEYFERT'S SONS, Inc.

437 N. Third St. Philadelphia

25-TON REFRIGERATING MACHINE**For Sale**

One 25-ton refrigerating machine, with condensers and complete equipment, in A-1 condition. Price \$1500 for quick sale. Reason for selling, putting in a larger machine.

W. H. LUDEN READING, PA.

Diesel Oil Engine

170 H. P. direct connected to a 120 K. W. 250 volt Western Electric Generator complete; seen running.

Address POWER EQUIPMENT CO.
500 Fifth Avenue, New York

Special Bargains in Sanders

- 42" 3-drum Perfection Sander, thoroughly overhauled. \$350.00
- 48" 3-drum Thomas Sander. \$400.00
- 48" 3-drum H. B. Smith Sander. \$500.00
- 48" 3-drum Royal Invincible Sander, used only 3 weeks. \$550.00
- 54" 3-drum J. A. Fay & Co., fine order. \$500.00
- 60" 3-drum Columbia Sander in A-1 condition. \$600.00

JOINTERS

- 20" Carrey Hand Jointer. \$100.00
 - 30" Buss Extra Heavy Hand Jointer. \$125.00
- Woodworking machinery of all kinds. Write, stating your requirements.

CLEVELAND BELTING & MACH'RY CO.

1922 Scranton Rd. Cleveland, O.

MACHINERY AT A BARGAIN

- 150 H. P. Casey-Hedges Return Tubular Boilers.
- Boiler Feed Pumps.
- Enclosed Heater, in fair condition.
- 11x9 1/2 Westinghouse Air Compressor.
- Westinghouse Junior Vertical Engine-Driving Exciter.
- DeLeval-Stanley Generating Outfit, consisting of a DeLeval Turbine geared to 2 Stanley 30 K. W. 240-volt 3-phase 60-cycle Alternators.
- Westinghouse-Parsons 300 K. W. 60-cycle 3-phase 480-volt units in good condition, complete with Westinghouse-Leblanc condenser and motor-driven auxiliaries.

Also Five Miles Copper Wire, Meters, etc.

For further particulars write

M. B. WELLBORN, Anniston, Alabama

FOR SALE**P I P E****Second-Hand**

All sizes, 1/8" to 24"

Furnished with new threads and couplings, suitable for every practical purpose.

Also large assortment of Contractors' Equipment, Hoisting Engines, Boilers, Concrete Mixers, etc.; all thoroughly overhauled.

Marine Metal & Supply Co.
167 South St. NEW YORK

Mill For Sale

Entire Plant Refined Iron and Steel Company, Pittsburgh District

1—1000 H. P. Hamilton Corliss Engine.

7—150 H. P. and 3—200 H. P. Bass Waste Heat Boilers.

Mill—1—22", Three High.

150 tons Cast-Iron Floor Plates.

1—300,000-lb. 46" Fairbanks Railroad Track Scales.

1—4 1/2-ton Sprague Magnetic Hoist, 54" magnet.

Above only partial list; will furnish complete list on request.

Low prices will be made on any part of this equipment for prompt removal.

Pumps For Sale

1 Tandem Compound Duplex, 10" discharge pipe, 12" suction pipe, 1440 gal. per minute.

1 Snyder-Hughes Cross Compound Crank and Flywheel, 18"x18"x32" L. P., 10 1/2" water plunger, 1900 gal. per minute.

1 Laidlaw-Dunn-Gordon Duplex, 8" discharge pipe, 10" suction pipe, 800 gal. per minute.

1 Hughes Duplex Simple, 16"x18"x12" water plunger.

All the above described pumps are in good condition, and we offer them at 25 per cent. of original cost.

GEORGE A. McLEAN & COMPANY

Beaver Avenue and Reedsdale Street

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A. C. UNITS 3 PHASE 60 CYCLES

K.W. Make.	Volts.	Rev.	Engine.
165 Westge.	220-440	225	Erle 18x18.
300 Westge.	220	120	C. C. Corliss.
400 Westge.	440	100	24x48 Corliss.
600 Westge.	440	90	32x48 Corliss.
1050 Ge. Elec.	220	100	McI. & S. C. C.

Also D. C. Units, Boilers, Engines, etc.
Write us for any Second-hand Machinery.
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FOR SALE—New Lathes at Bargain Prices

Geared head 20"x10", 18"x10", 18"x8", 16"x8", 16"x6". Cone head 20"x10", 15"x8", 15"x6". All the above with semi-quick-change gears. Second-hand lathes with geared heads, quick-change gears, 16"x8", 16"x6", 15"x6". Second-hand lathes, cone head, plain gears, 29"x18", 27"x16", 20"x10", 18"x8", 13"x6", 13"x5".

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SECOND HAND MACHINE TOOLS**OF EVERY CONCEIVABLE TYPE**

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PRENTISS TOOL AND SUPPLY CO.

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PIPE**FOR ALL PURPOSES**

Slightly used Pipe from 1" to 12" with new threads and couplings. Thoroughly overhauled and tested before shipping.

We can save you money.

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Two 250 H. P. Babcock & Wilcox Water-tube Boilers, insurance certificate 160 lbs. steam pressure, each \$1000.

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Send for complete "Bargain List."

SPECIAL BARGAINS**BOILERS**

- 3 250 H. P. Franklin Horizontal Water-Tube, 150 lbs. steam.
- 1 200 H. P. Geary Water-Tube, 150 lbs. steam.
- 1 175 H. P. 72"x20" Horizontal Return Tubular, 120 lbs. steam.
- 1 150 H. P. 72"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 150 H. P. Babcock & Wilcox Water-Tube, 150 lbs. steam.
- 1 125 H. P. 60"x18" Horizontal Return Tubular, 125 lbs. steam.
- 1 80 H. P. Vertical, 100 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 125 lbs. steam.
- 1 70 H. P. 54"x16" Horizontal Return Tubular, 100 lbs. steam.
- 2 50 H. P. Locomotive, portable, 100 lbs. steam.

CORLISS ENGINES

- 35"x48" Hamilton.
- 26"x60" International.
- 20"x42" Hewes & Phillips.
- 18"x42" Watts-Campbell.
- 16"x36" Allis.
- 16"x32" Rickards.
- 14"x42" Hamilton.
- 2 14"x36" Scottsdale.
- 12"x24" Hewes & Phillips.
- 10"x24" Watts-Campbell.

AIR COMPRESSORS

- 1 18"x20 1/4"x13 1/4"x24" Ingersoll-Sargeant Class A Straight Line, two stage. Capacity 940 cu. ft.
- 1 22"x22 1/4"x24" Ingersoll-Sargeant Class A Straight Line. Capacity 973 cu. ft.
- 1 12"x14 1/4"x14" Ingersoll-Sargeant Class A Straight Line. Capacity 385 cu. ft.
- 1 12"x12"x16" Ingersoll-Sargeant Class C Straight Line. Capacity 275 cu. ft.
- 1 10"x10"x10" Ingersoll-Sargeant Duplex. Capacity 275 cu. ft.

DIRECT CONNECTED UNITS

- 1 200 K. W. 220-volt D. C. Westinghouse, 3-phase 25-cycle Generator, direct connected to Buckeye Engine.
- 1 150 K. W. 250-volt D. C. Crocker-Wheeler Generator, direct connected to 14 1/2"x24"x16" Wright Center-Crank Tandem Compound Automatic Engine, 200 R. P. M.
- 1 50 K. W. 125-volt D. C. Westinghouse 6-pole Generator, direct connected to 10"x18"x10" Westinghouse Compound Engine, 315 R. P. M.
- 1 105 K. W. 220-volt 3-phase 60-cycle Westinghouse Alternator, direct connected to Buckeye Engine.

BOILERS, PUMPS, HOISTING ENGINES, WESTINGHOUSE ENGINES, GAS AND GASOLINE ENGINES, HEATERS, STONE CRUSHERS, AND GENERAL EQUIPMENT

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Second-hand, all sizes, 1/2" and larger, with new threads and coupling, guaranteed for service.

1 1/2-yd. Ransome concrete mixer with gasoline motor and loader on wheels.

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24" and 20" industrial rail and turntables.

1 5 H. P. Meltz & Weiss gasoline engine.

1 4-leaf 1-yd. orange-peel bucket.

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One 75 H. P. 3-cylinder Westinghouse Producer Gas Engine; only been used three months; in good condition; too small for our load; with small expense can be changed to Natural Gas Engine.

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WANTED TO BUY**PIPE AND CASING**

8, 10 and 12-inch, also other sizes. Will pay spot cash for good usable material.

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One "Vilter" engine and compressor in one unit, 200 H. P., 100 tons refrigeration, complete with all accessories; one "Vilter" gauge stand and platform; one vacuum gauge; one high-pressure gauge; one low-pressure gauge; one "Vilter" scale trap; one "Cookson" system distiller, using exhaust steam, also connected by bypath; one Murray high-speed engine, 50 H. P.; one Dayton pump, 4-inch intake, 3-inch outlet; one Dayton pump, 6-inch intake, 4-inch outlet; one Dayton pump, 3-inch intake, 1 1/2-inch outlet; one tool cabinet and locker, size 8x12, with sliding doors, tool hangers, drawers for supplies, and one "Dearborn" oil separator, 48x26 inches, complete with fittings and wall brackets and all other accessories necessary for a complete ice plant as well as refrigeration. In perfect condition and will be sold at a low price, as have no use for it. Address

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1 100 K. W. G. E. 250-volt D. C. Generator, D. C. to high-grade auto. engine.

100 K. W. Jeffrey 250-volt, belted to McEwen 16x16 engine.

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Both good for 125 K. W.

In stock.—Immediate shipment.—Guaranteed first-class electrically and mechanically.

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50 H. P. 3-phase G. E., complete, 850 R. P. M.....250.00
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Carload Small Direct Current Semi-enclosed Motors at following prices:
1/4 H. P., 1400 R. P. M.....\$8.50
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Special price in lots of ten.
We carry large stock electrical machinery. Let us have your requirements.

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1 75 H. P. Pennsylvania Horizontal Tubular, 50 tubes.
1 60 H. P. Horizontal Tubular.
1 15 H. P. Lidgerwood Uprights.
1 20 H. P. Surrey Parker.
1 6 H. P. Erie City Upright.

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1 Sinker Davis Sawmill Rig.
1 Surrey Parker Log Loader.
1 Surrey Parker Log Loader Steam Plant.
1 Wheland Gang Edger.
1 Set Live Lumber Rolls.
1 B. T. B. Knife Grinder.
Saws from 19 to 55".

ENGINES

1 10"x15" Haberkorn.
1 12"x14" Wheland.
1 10 1/2"x12" Class C Wheelands.
1 9"x11" Class C Wheelands.
1 13"x16" Twin Throttling Wheland Engine.
1 9"x9" Vertical.
1 9"x10" Shepherd.
1 12"x12" Sinker Davis.
1 12"x20" Erie City.

MISCELLANEOUS

1 Forbes 3" Pipe Machine.
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Lot unused 16"x24" Crane Fittings.

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One 40 K. W. and one 60 K. W. 250-volt D. C. direct-connected engine generator sets, complete with all accessories and guaranteed in excellent condition at bargain prices. Large stock motors and small generators. We buy and sell only modern high-grade electrical apparatus, which we thoroughly overhaul and guarantee fully.

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BOILERS, STATIONARY; HIGH PRESSURE: 1 200 H. P. for 125 lbs.; 2 150 H. P. for 150 lbs.; 3 150 H. P. for 125 lbs.; 2 100 H. P. for 125 lbs.; 3 80 H. P. for 125 lbs. Standard from 150 H. P. to 20 H. P. for 150 lbs.

BOILERS, FIRE BOX: 150 to 10 H. P. high and low pressure.

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GENERATORS AND MOTORS: All sizes and kinds, belted and direct connected.

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Sole manufacturers of the Leader Injector and Ejector. Ask for circular.

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The following used machinery is offered for sale, in good operating condition, listed at Goldsboro, N. C.: 2 90 H. P. return tubular boilers, 1 60 H. P. return tubular boiler, 1 80 H. P. center crank engine, 1 40 H. P. center crank engine, 1 Glen Cove planer and matcher 6x10 in., 1 Glen Cove planer and matcher 6x14 in., 1 complete drykiln with 10 M. feet pipe. Low prices for prompt removal.

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Wholesale and Retail Dealers in

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SECOND-HAND MACHINERY AND PIPE
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Buy, Sell and Exchange Machinery
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Used Machine Tools

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16"x 6" Reed.
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20"x10" Lodge & Shipley, Q. C. G.
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SPECIAL LATHES

No. 3 Lodge & Shipley Rapid Reduction Lathe.
24"x7" Lodge & Shipley Chucking Lathe.
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3 18"x3" Lodge & Shipley Single Pulley Driven Lathes.

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Globe Power Hack Saw, 8" capacity

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One Marion Double Grinder.
One Marion Double Grinder on stand.
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One "Ohio Planer," 24"x24"x12", with two heads on cross rail.
Universal Swivel Table for Radial Drill.
Brown & Sharp Grindstone Frame for 5"x 36" stone.
One Mueller Grindstone Frame for 4"x27" stone.
One 12"x40" Mumford Molding Machine.
Write for complete description with prices of machines in which you are interested.

The Lodge & Shipley Machine Tool Co.
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FOR SALE ALTERNATOR

Direct Connected to

Corliss Engine

1-400 K. W., 60-cycle, 3-phase, 440 volt Alternator, direct connected to 24x 48 Heavy Duty Rolling Mill Type Frame Double Eccentric Corliss Engine.

This outfit is in excellent condition, ready for immediate delivery and service.

Pfannmueller Engineering Company

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Now in use, of modern type, first-class order and condition, with full and complete equipment, consisting of Lathes, Planers, Drills, Horizontal and Vertical Boring Mills and Milling Machines.

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1 22 H. P. Buffalo Pitts Traction Engine.
4 7-yd. Buffalo Pitts Traction Cars, 10" tread.
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1 Lidgerwood, 1700' span, 10x12 engine, complete; no towers.
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1 10-ton Browning Crane, 38' boom, fine condition.

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2 40 H. P. on wheels, 100 lbs. steam.
2 66x16 H. T. Boilers, butt strapped, 120 lbs. steam.

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2 1900' Belt Drive Band D 3 Type, 17x17x30.
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1 Ingersoll-Rand, Class A, steam driven, 20x 22x14.

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One Land Pile Driver, 3000-lb. hammer, 50 ways and steel rollers.

One Steel Stack, S. S., 6'x100'.
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Boilers, Stationary Engines, Hoisting Engines, Pumps, new and second-hand, every size and for every duty.

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1 1/4-yd. Koebering Mixer, boiler and engine on trucks, side loader and water tank. Has new drum and tracker wheels.
1 No. 10 Chicago Mixer, gasoline engine on trucks, side loader and tank; 1 year old.
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1 17x22" Locomotive; 1 14x20" Locomotive; 1 Ingersoll-Rand Compressor, Imperial type, 670 cubic ft. air; 1 Ingersoll-Rand Compressor, Imperial type, 200 cubic ft. air; 1 Rand Drill Compressor, 75 cubic ft. of air; 1 3/4 Fay & Scott Engine Lathe, as good as new; 1 Georgia Iron Works Trimmer; 1 10x12 Ajax Engine; 1 7x10 Skinner Engine; 1 8x10 Ajax Engine and Boiler on wheels; 1 100-horsepower Tubular Boiler; 1 20-horsepower Locomotive Boiler; 1 15-horsepower Tubular Boiler; 1 20x20" Slab Conveyor; 1 6" Pipe Bent for Slab Conveyor; 1 Kentucky Power Cane Mill; 1 Boiler for Turpentine Pump, new; 1 Williams Vulcanizer for Tubes and Casings; 1 Fairbanks-Morse 2-horsepower Engine and Pump, new; 1 Thompson No. 2 Log Jack, new; 1 Thompson No. 1 Log Jack, new; 1 Thompson No. 3 Slab Conveyor, new; 1 Thompson No. 1 Slab Conveyor, new; 1 Thompson Wood Splitter, new; 1 Thompson No. 1 Power Cane Mill, new; 1 Pipe Machine, second-hand; 1 9" Filer & Stowell Twin Engine; large stock of Pulleys and Hangers.

If you do not see what you want, write us, as our stock is changing daily.

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Contractors' Plant For Sale At a Bargain

2 10-ton Road Rollers.
2 Steel Tank Sprinkler Wagons.
1 25 H. P. Traction Engine.
3 No. 4 Champion Crushers on wheels with Revolving Screen and Elevator.
6 Wheel Scrapers, Steam Drill Pump, etc.
2 1/4-yard Smith Mixers with Steam Boiler and Engine mounted on same frame.

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RELAYING RAILS

Send me your inquiries

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RAILS, CARS, AND LOCOMOTIVES

FROGS, SWITCHES, Etc

Road Equipment

2 10-ton Kelly-Springfield Road Rollers, double engine, 3 years old, perfect condition, \$1100, f. o. b. Pittsburgh, Pa.; guaranteed.

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All above equipment overhauled and guaranteed ready for immediate shipment.

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FREIGHT CARS PASSENGER COACHES
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LARGEST STOCK REBUILT EQUIPMENT IN U. S.

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ROLLING MILLS: HYDE, CLEARFIELD COUNTY, PA.
NEW YORK GENERAL OFFICES: PHILADELPHIA, PA. PITTSBURGH
MANUFACTURERS OF RAIL CARBON; ALSO BILLET STOCK
LIGHT STEEL RAILS
12, 16, 20, 25, 30, 35, 40 and 45 lb. SECTIONS
SPICE BARS, TRACK BOLTS AND SPIKES, FROGS AND SWITCHES
RELAYING STEEL RAILS
IN ALL SECTIONS FOR IMMEDIATE SHIPMENT FROM STOCK

Relaying Rails

56 to 80-lb. Sections
Ready for prompt shipment. New or relaying light rails. New frogs, switches, etc.
20-ton used Climax engine in excellent condition. Specifications on request.

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RAILS LOCOMOTIVES

RELAY RAILS
LOCOMOTIVES—Narrow and Standard Gauge. 150 Locomotives at our shops 6 to 80 tons. Freight and Passenger Cars
Largest Stock Locomotives in United States

Southern Iron & Equipment Co.
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Sweet's Steel Co.

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Manufacturers of

Light Steel Rails

12, 16, 20, 25, 30, 35 and 40-lb. Sections.
Also Splices, Bolts, Nuts and Spikes.
Our Rails are first quality. A, S. C. E. Section, carefully inspected.

Prompt Shipments from Stock
Bedstead Angles and Special Shapes.

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SIX-TON ASPHALT ROLLER
in excellent condition. Write
LAWRENCE & BLAKESLEY CO.
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Tractor-Roller and Wagons FOR SALE

A Buffalo Steam Ten-Ton Tractor and Roller, and Twelve 5-Ton Wagons for use with it. Used about three months.

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Ten-ton Gasoline Road Roller, used but one season. Will make low price and hold roller for spring delivery if desired. Write
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20, 25, 30, 35, 40, 45, 50, 56, 60, 65, 70, 80, 85, 90 and 100 lb., all with Fish Plates.
NEW RAILS
8, 12, 16, 20, 25, 30, 35, 40, 45 lb., at manufacturer's prices
LARGE TONNAGES—Carload and less carload lots, advantageously located for Southern delivery.

Splice Bars for any section rail in stock. Frogs, Switches, Bolts, Nuts, Spikes, and all Track Accessories.
New and Second-hand Pipe, all sizes, with good Threads and Couplings.
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All second-hand materials guaranteed. Subject to inspection during loading, or will ship subject to your approval at destination. Attractive prices. Quick Shipment.
Before buying write for our bulletin.

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For Sale or Rent COMPRESSORS
1 22x22 13 1/4x24 Sullivan, steam driven, class WB 2, straight line, 2 stage, capacity 1160 cu. ft.
1 24x24x30 McKiernan, class A, straight line, capacity 1414 cu. ft.
1 24x24x30 Ingersoll, class A, steam driven, straight line, capacity 1223 cu. ft.
2 16x20x16 Ingersoll-Sargeant, class H-1, duplex, steam driven, capacity 1540 cu. ft.
2 65-ton Bucyrus steam shovels, 2 1/2-yd. dipper (bargain).
2 Lidgerwood hoisting engines, 14"x18", D. C. three tandem drums, reversible and link motion, suitable for dredge, cableway or incline work.
A complete stock of hoisting engines, concrete mixers, derricks, pumps, boilers, etc.; in fact, everything for the contractor.

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10-WHEEL TYPE

Six—Built by Baldwin Locomotive Works in 1906, excellent condition, modern in every respect; cylinders 20x28", driving-wheel centers 60", weight about 80 tons; suitable for either freight or passenger service. Ready for immediate delivery.

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A. S. C. E. Sections LIGHT STEEL RAILS

PROMPT DELIVERY.
8, 12, 16, 20, 25, 30, 35, 40 pounds per yard. With Splices and Spikes.
UNITED STATES RAIL CO.
Manufacturers, Cumberland, Md.
Certificates of inspection by Hildreth & Co., Inspecting Engineers of New York City, assuring absolutely first quality, furnished free of cost.

Locomotives

Four wheel type
40 tons; 17"x24"; 160 lbs. pressure

Overhauled
Modern

E. H. WILSON & COMPANY
ARCADIA BUILDING
PHILADELPHIA

Passenger Coaches

Released by Pennsylvania R. R.

HENRY LEVIS & CO.

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Relaying Steel Rails

35-lb., 40-lb., 56-lb., 60-lb., 70-lb., 80-lb., 85-lb. and Angle Bars to lay same

Advantageously located for Southern delivery; also other weights of **RELAYING RAILS**, in different sections of the country; and **NEW STEEL RAILS**, all weights. We handle first-class Relaying Rails, and do not select them from scrap. Let us know your requirements. We buy Rails fit to relay, and pay spot cash.

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Low Prices on New FROGS and SWITCHES.

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Four standard-gauge Climax locomotives, weighing 30 to 45 tons; excellent condition; thoroughly overhauled; immediate shipment.
Also forty other standard and narrow gauge locomotives at our shops, Birmingham.

STEAM SHOVELS
We have ten steam shovels, of different sizes and makes, thoroughly overhauled. Write us for prices and terms.

BIRMINGHAM RAIL & LOCOMOTIVE CO.
Birmingham, Ala.

414 Coffee Exchange Bldg.
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Bargains in Rebuilt Boilers, Engines, Locomotives, Etc.
1 25 H. P. Rebuilt Fire Box Boiler, price \$300.
1 each 40, 60 and 80 H. P. Rebuilt Fire Box Boilers, with fittings, at a bargain.
1 each 60, 80 and 100 H. P. Horizontal Tubular Boilers.
1 each 4, 8 and 10 H. P. Vertical Boilers, complete.
2 16 H. P. Hoisting Engines, double drums, with boilers.
1 25 H. P. Hoisting Engine, single drum.
1 60 H. P. Gas Engine (used four months).
1 10' dia. Mine Ventilating Fan, with engine.
1 10-ton "Baldwin" Saddle Tank Locomotive, 44" gauge.
1 30-ton "Climax" Geared Logging Locomotive, 3' gauge.
1 each 6, 8 and 10' Electric Mine Ventilating Fans (Thayer Pat.).
The above must be sold without reference to cost. Write us.

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Ten-ton Buffalo-Pitts Roller; Water Wagon and Scarifier. Outfit as good as new. Service guaranteed. Address
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500 Tons 80-lb. Rails.
500 Tons 90-lb. Rails.
Several Locomotives and Cars.

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For Sale

Relaying Steel Rails

78 tons, 48 lbs. per yard, with plates
200 tons, 56 lbs. per yard, with plates
800 tons, 60 lbs. per yard, with plates
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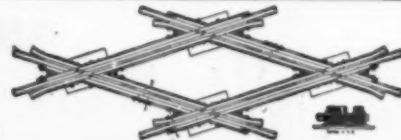
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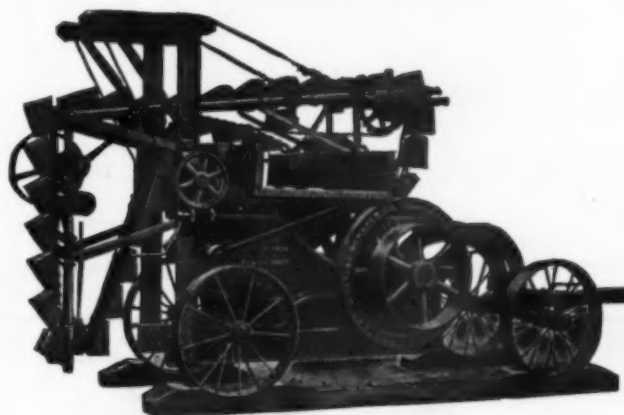
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have unquestioned advantages for certain kinds of work; and when properly designed are as reliable as steam power.



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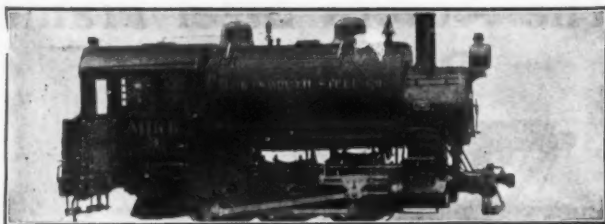
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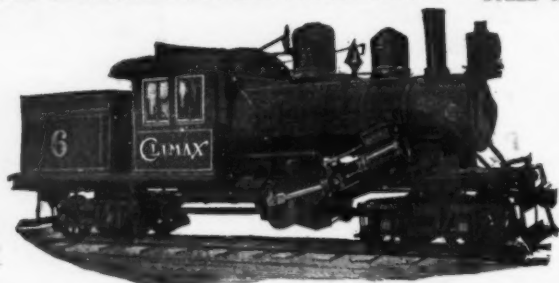
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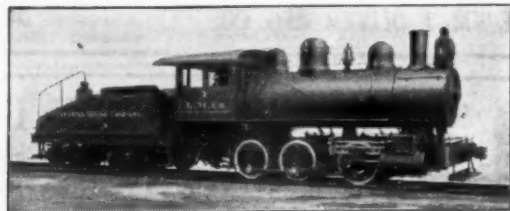
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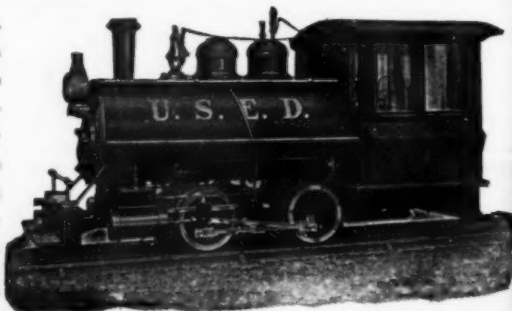


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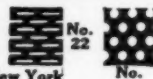
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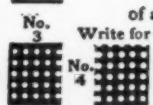


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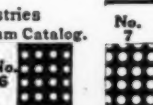
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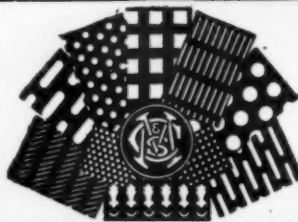
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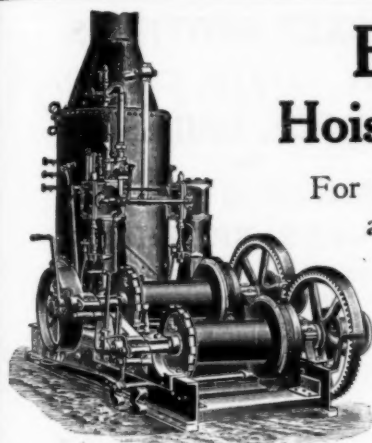
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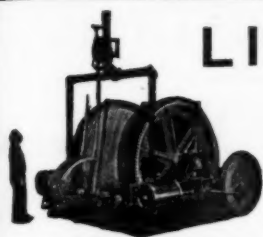
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Steam and Electric Hoists for Shafts, Inclines,
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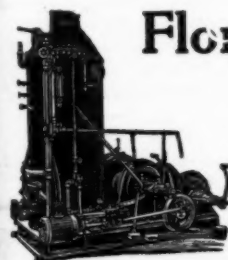
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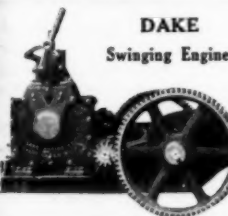
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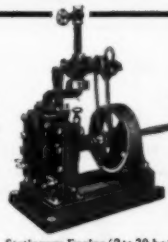
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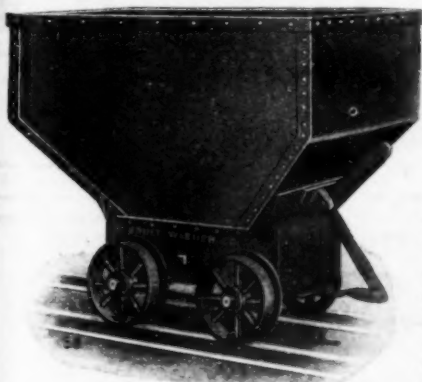


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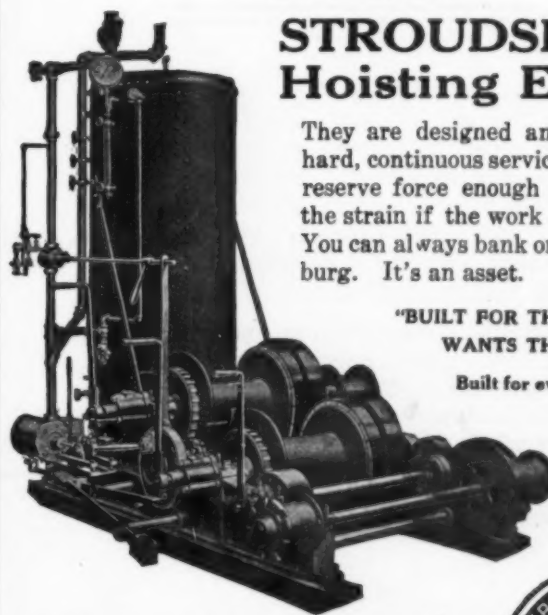
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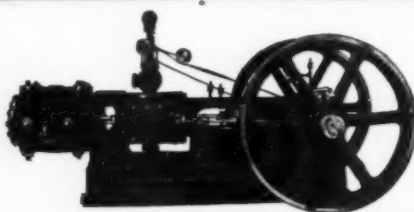
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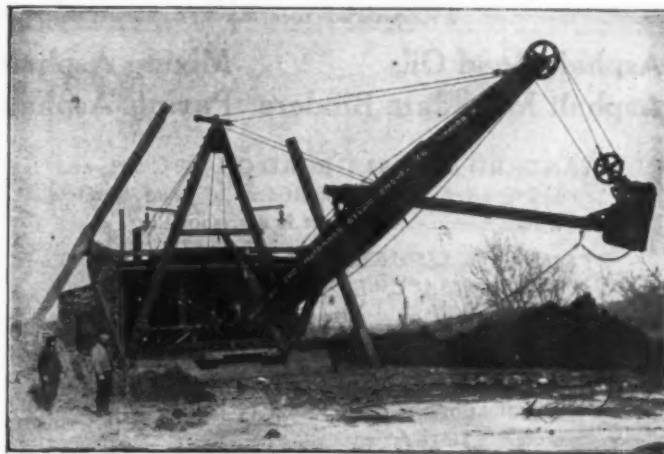
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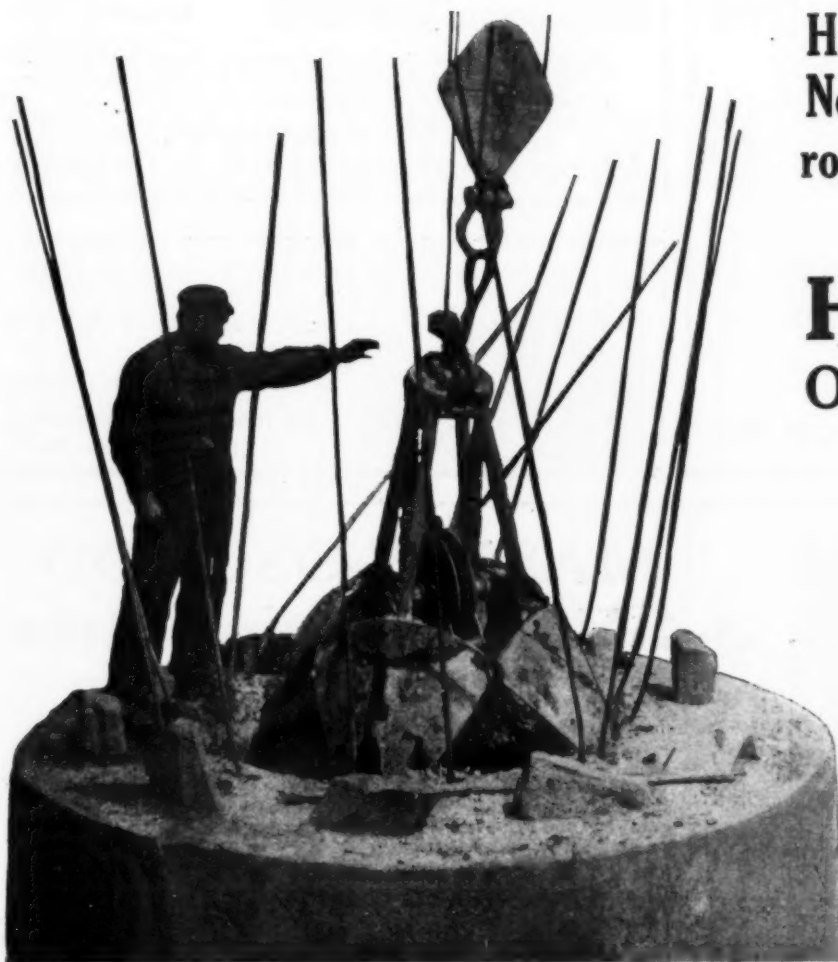
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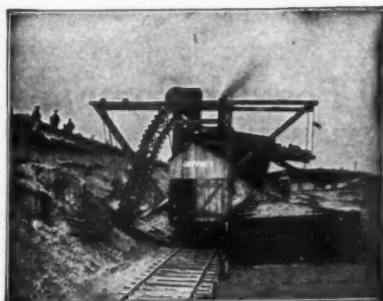
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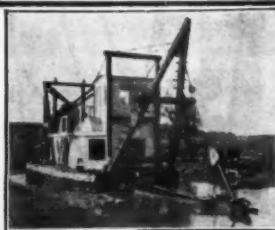
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Portable Self-Contained
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 for Earth, Sand,
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The Machine, shown in above illustration, Digs, Screens, Elevates and Washes the material. Delivers sand to second track and gravel to the ground beyond or to cars on the third track.

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We build Suction Dredges.

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M-O "18" 3/4-YD. SHIPPING WEIGHT 17 1/2 TONS

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3-4 Yd. Revolving Shovel

With Independent Steam-Steering Engine. Also Combination Hand-Steer Operated from Either Side of Shovel

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 Vesey St., Broadway to West St.
 Washington St., Broadway to Carlisle
 W. Broadway, Dey to W. 4th St.
 Worth St., Broadway to Church St.
 Whitehall St., Bowling Green to
 South Ferry
 East Broadway, Scammel to Gouver-
 neur
 Delancey St., Bowery to Lafayette
 Norfolk St., N. S. Hester to S. S. of
 Houston.
 Pitt St., Broome to Houston St.
 Avenue C, Houston to 12th
 Broome St., Broadway to Centre
 Stone St., Mill Lane to William St.
 Avenue A, Houston to 24th
 Fourth St., McDougal to 6th Ave.
 Lewis St., Grand to Delancey
 22d St., 6th to 10th Ave.
 18th St., Broadway to 6th Ave.
 Houston St., Lewis to Norfolk
 Houston St., Varick to Hudson
 Battery Pl., Broadway to West
 Bond St., Bowery to Broadway
 Bridge St., Whitehall to State
 Cedar St., 150 ft. E. William to Pearl
 Church St., Vesey to Duane
 Cortlandt St., Broadway to West
 Duane St., Broadway to West
 Great Jones St., Bowery to B'way
 Greenwich St., Vesey to Chambers
 John St., Broadway to Nassau



Murray St., Broadway to West
 Park Place, Broadway to West
 Spring St., Broadway to Sullivan
 Trinity Pl., Morris to Liberty
 Warren St., Broadway to Greenwich
 Albany and Carlisle, Washington to
 W. 10th St., Hudson to West
 W. 20th, Broadway to 5th Ave.
 W. 13th, 8th to 10th Ave.
 23d St., 10th to 11th Ave.
 2d Ave., intersection of 26th St.
 Lafayette St., 150 ft. N. of Spring St.
 and extending 275 ft. North
 Sheriff St., Broome to Houston
 34th St., Madison to 8th Ave.
 Prince St., Broadway to Wooster
 Church St., Liberty to Vesey St.
 Cannon St., Rivington to Houston
 Houston St., McDougal to Bedford
 Water St., Scammel to Montgomery
 12th St., Broadway to 5th Ave.
 25th St., 5th to 7th Ave.
 Houston St., Eldridge to Bowery.
 Second Ave., 13th to 15th and 17th to
 19th
 First Ave., 26th to 28th
 Stone St., Broad to Whitehall
 Exchange Pl., Hanover to New
 Washington St., Battery Pl. to Car-
 lisle and Albany to Dey
 Hudson St., Barrow to Christopher
 Clarkson St., Varick to Hudson
 Water St., Wall to Maiden Lane
 Delancey St., Essex to Chrystie
 10th Ave., 50th to 51st
 Pearl St., Broad to Whitehall
 Second Ave., 5th to 7th
 59th St., Columbus Circle to Colum-
 bus Ave.
 Old Slip, Water to Pearl
 *53d St., 6th to 9th Ave.
 *8th St., Broadway to 6th Ave.
 *13th St., 4th Ave. to University Pl.
 *Duane St., Lafayette to Elm

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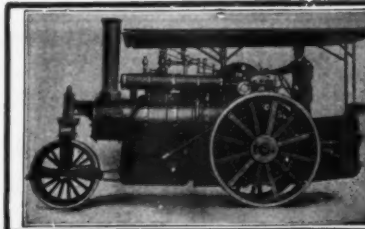
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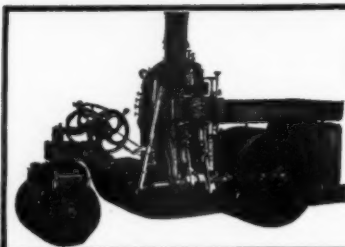
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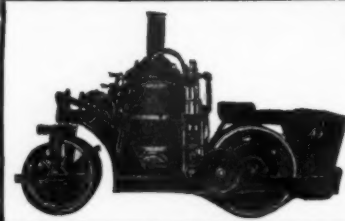
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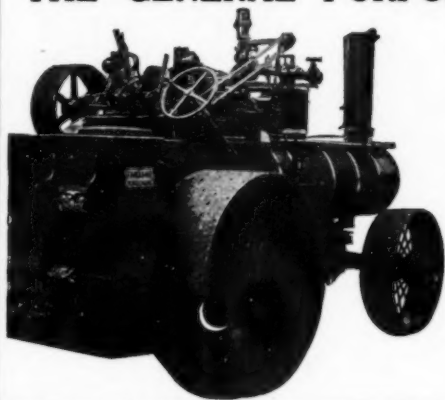
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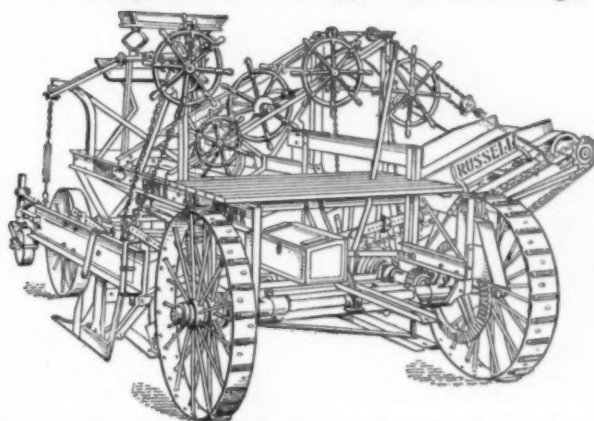
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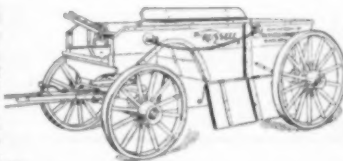
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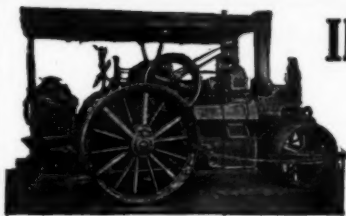
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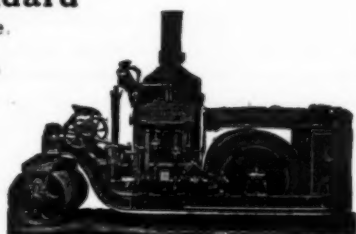
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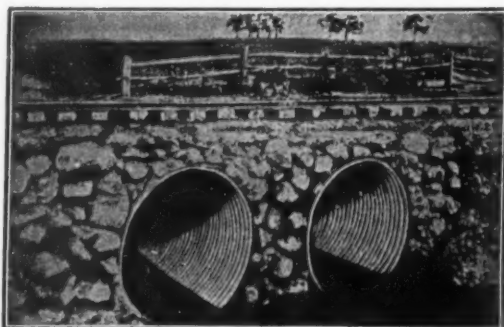
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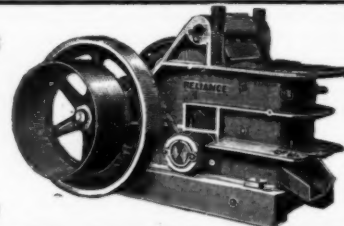
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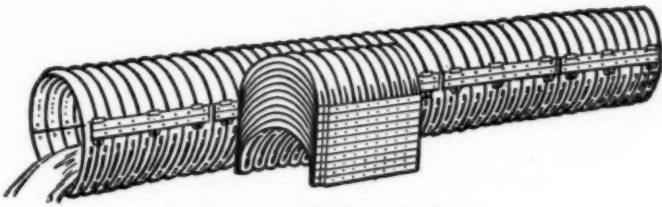
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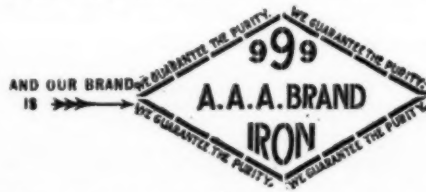


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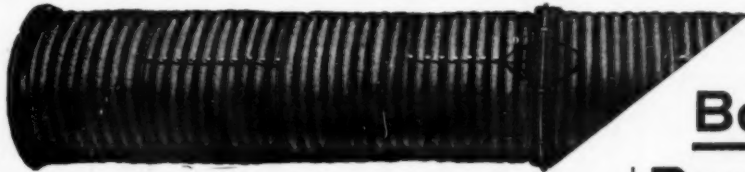
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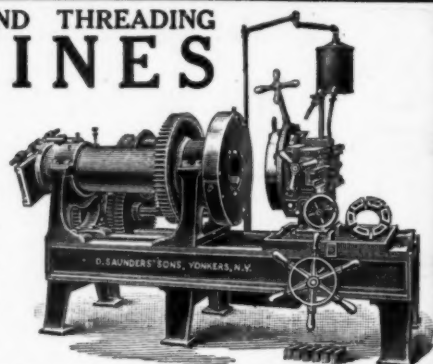
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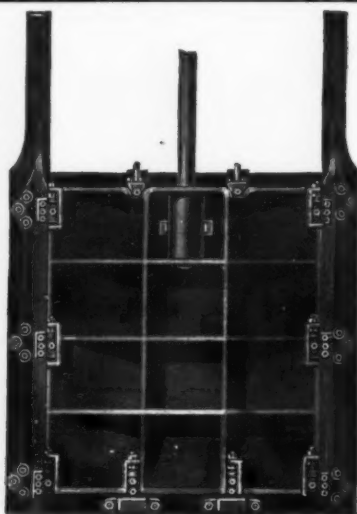
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Wall Coping

Thimbles
Fire Brick
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Standard Sewer Pipe

Made in all sizes and at prices to please. Has wonderful
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SOUTHERN SEWER PIPE COMPANY
BIRMINGHAM, ALA.



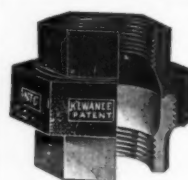
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Have Bronze to Bronze at
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This construction is embodied in our Flange
Elbow, Tee, Male and Female and Air Pump
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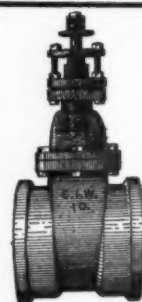


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This is the title of Experience No. 17 in the series,
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which appeared in a page announcement (page 118) in
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Salt Glazed Sewer and Culvert Pipe

Wall Coping, Drain Tile, Flue Lining, Chimney Tops, Hollow Tile, Fire
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will solve your cleaning problem. Write for catalog and list of installations
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Your Best Investment

If you are interested in the South and Southwest and want to keep in touch with this fast growing section, read the Manufacturers Record *every* week.

\$4.00 a Year Less Than 8c. a Week

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Develop More Power

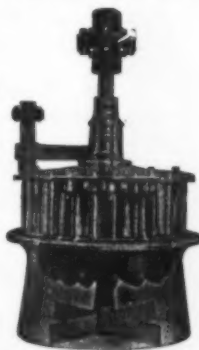
with a given quantity of water than any other turbine of the same dimensions, operating under the same conditions.

We build these turbines in all sizes and styles, on upright or horizontal shafts, belted or direct connected, single or in pairs. They are suitable for direct-connecting to generators, air-compressors, pumps or other machinery.

If interested send for our latest literature.

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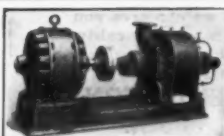


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With Centrifugal Pumps, whether of the Turbine or Volute Type, the name of Alberger is a guarantee of maximum service and minimum operating expense.

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Over 70 sizes and styles, for drilling either deep or shallow wells in any kind of soil or rock. Mounted on wheels or on gins or horse power. Strong, simple, durable. Any mechanic can operate them. Send for catalog.

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For Heavy Loads
For Hard Service
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Made in Halves
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SPIRAL WATER TUBE HEATING
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We contend that our pipe is **RIGHT**. It is as good as the best and better than the *average*.

How can we make such claims?

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Proper selection of ores from a practically unlimited supply. Reduction of ores by the approved and most modern methods. Refining of iron in a steel plant that is a marvel of its kind. Rolling mills and pipe mills, the equipment of which is unquestionably most modern and complete, and the direct supervision of every detail of manufacture by iron and steel experts—men who know.

We invite you to visit our mills and follow each step from ore to pipe. You will know without doubt that our claims are justifiable.

You will specify **YOUNGSTOWN** pipe.

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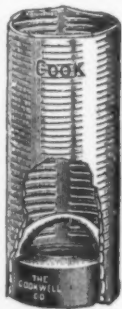
Cook's System of Wells

For Cities, Towns, Villages,
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Work guaranteed. Estimates cheerfully given. Prices Reasonable.
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HAVE YOU A WELL TO DRILL? **ARTESIAN WELL DRILLERS. TEST BORING.**
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ALL SIZES, BELT DRIVEN AND DIRECT CONNECTED

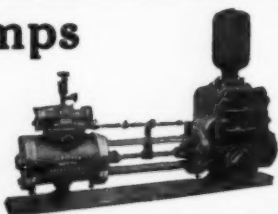
For Irrigation, Tanneries, Mine Drainage, Phosphate Mining, Circulating Water
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Ideal Steam Pumps

"The Pump That Will Not Short-Stroke"

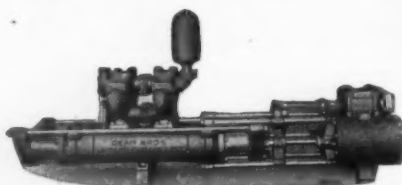
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DEAN BROS. STEAM PUMP WORKS. INDIANAPOLIS.

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Duplex Steam Pump, outside end packed,
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Duplex, Electric Driven, gen-
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Pumps for All
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The Capacity of this No. 36
Downie Double Stroke Deep
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30,000 Gallons Per Hour

using a 12" Working Barrel, at a depth of 300
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The best Single Stroke Pump we know of (made
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If you have to do with pumping
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Downie Pumps are, de-
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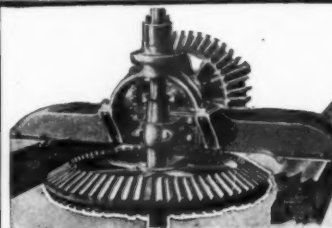


THE POOLE-LEEFEL TURBINE WATER WHEEL

Reasonable price. Unequaled workmanship.
Made for a variety of purposes, under various
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Special wheels made to order. Let us hear
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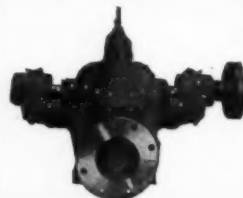
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Lea Centrifugal Pumps

are built for any service of the single
suction pattern, double suction or
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LEA EQUIPMENT CO., Philadelphia
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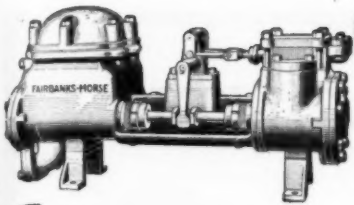
OF ALL KINDS, FOR ALL PURPOSES

SWITCHES, TURNABLES

Complete Industrial Railway Equipment

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A Steam Pump Built Like a Pumping Engine

Fairbanks-Morse Steam Pumps

are made in the same shop with our largest power pumps, have the same care, the same workmanship; that is *one* of the reasons why Fairbanks-Morse pumps are more efficient, stand up better than the ordinary kinds. There's a Pump for every service.

Write for Catalog 38N938

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The Slogan of the Cameron—"Character: The Grandest Thing."

Cameron Centrifugals



The Cameron Single Suction Open Impeller Pump (illustrated) is especially adapted for contracting and irrigating work.

Simple in design, compact and rugged, it gives excellent service under the severest conditions. Only the highest grade material and workmanship enter into its construction.

This pump may be driven by belt, or direct connected to steam engine, gas engine or motor. Standard sizes kept in stock.

Further details in Bulletin No. 152—it's free.

A. S. Cameron Steam Pump Works

11 Broadway, NEW YORK

Offices the World Over

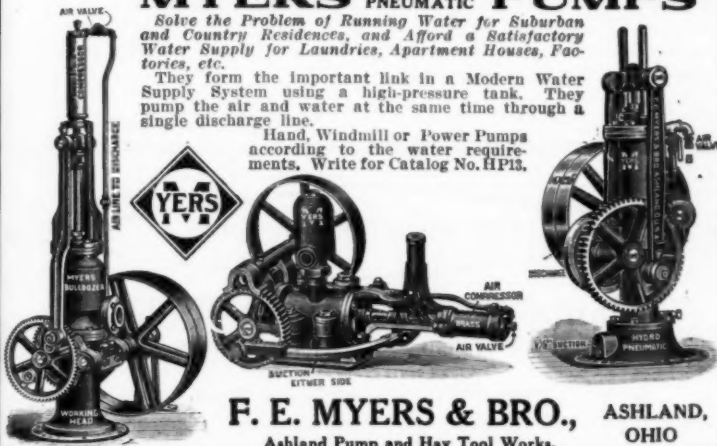
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MYERS HYDRO-PNEUMATIC PUMPS

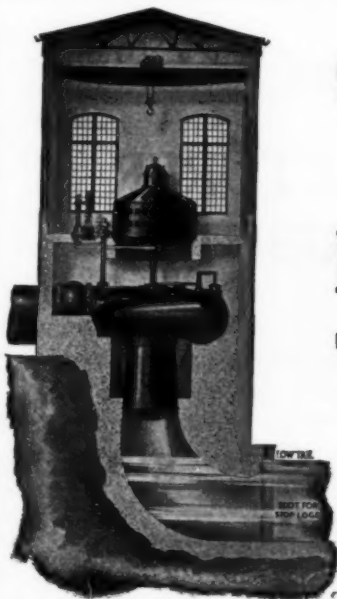
Solve the Problem of Running Water for Suburban and Country Residences, and Afford a Satisfactory Water Supply for Laundries, Apartment Houses, Factories, etc.

They form the important link in a Modern Water Supply System using a high-pressure tank. They pump the air and water at the same time through a single discharge line.

Hand, Windmill or Power Pumps according to the water requirements. Write for Catalog No. H.P.3.



F. E. MYERS & BRO., ASHLAND, OHIO
Ashland Pump and Hay Tool Works.



90% Efficiency FROM Hydraulic Turbines

Recent tests of Smith Turbines have shown efficiencies of from 89% to over 90%. The engraving represents one of five units, each 17,000 H. P. at 514 R. P. M. under 600 feet head, now

in operation in the power house of the
Georgia Power Co., Tallulah Falls, Georgia

We design and build Turbines for heads from 5 feet to 650 feet. Also Head Gate Hoists, Trash Racks, Sluice Gates, Steel Pipe, Shafting, Gearing, Pulleys, Bearings, etc. etc.

Send for Bulletin M

S. MORGAN SMITH CO.
YORK, PA.

BRANCH OFFICES:
176 Federal Street, Boston, Mass.
644 American Trust Bldg., Chicago, Ill.

This Pump Automatically Keeps the Sumps Empty

This Goulds Electric Sump Pump is made for draining basements, and for similar services where the liquid to be pumped accumulates in a pit or sump.

The motor is automatically controlled by a starting device actuated by a float in the sump. This keeps the sump pumped without any attention whatever.

The pump used with this outfit is of the centrifugal single suction type. Outfits

can be furnished either with direct connected vertical motor as shown or with pulley for belt drive.



Bulletin No. 111 gives complete description and prices. Let us send you a copy.

THE GOULDS MFG. CO.
LARGEST MFR. OF PUMPS FOR EVERY SERVICE

59 W. Fall Street,

Seneca Falls, N. Y.

Branches and Agencies in Principal Cities



OPPORTUNITIES IN THE SOUTH

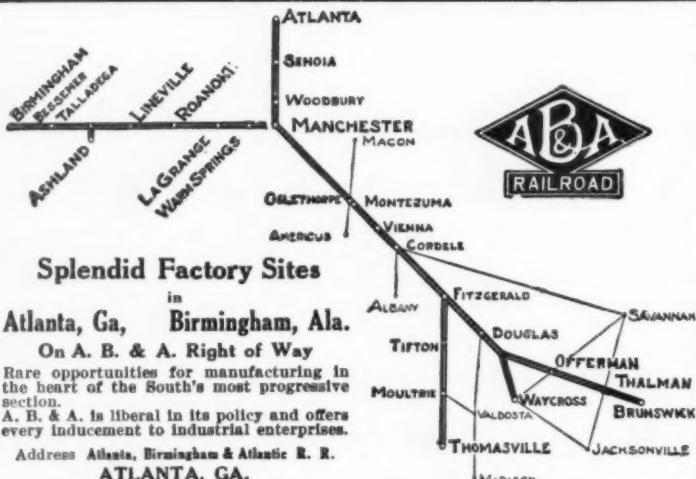
—FOR—

Manufacturers, Investors, Merchants, Farmers and Homeseekers

In the following pages leading railroads and a number of towns and cities invite your attention to the opportunities possessed by the rapidly developing South for every line of industry, for investments, and as a place for home-making in the city and on the farm.

The marvel of the day, commanding the world's attention to a greater extent probably than the development of any other section has ever received, is the amazing material upbuilding of the South. Everywhere men in every walk of life are beginning to study the South. They are coming to realize something of its matchless resources, to know something of the opportunities which it presents for manufacturing and for mining operations, for city building activities, for the utilization on a large scale of the cut-over timber lands and the reclaimable wet lands of the South.

With a view to presenting to the world from week to week the resources and the growth and the opportunities which are offered for all of these things, some of the leading railroads of the South and Southwest, some of the great public service corporations intimately identified with the upbuilding of this section and some of its progressive towns and cities from week to week tell the story of what they have to offer to the manufacturer, to the investor, to the merchant, to the pleasure-seeker, to the health-seeker. Study the pages that follow, and if you are at all interested in knowing about the South and its opportunities, its resources and its progress, if you want to keep in touch with that section which is attracting greater attention than any other part of America, get in communication with the organizations whose advertisements are to be found in the following pages.



Splendid Factory Sites
in
Atlanta, Ga., Birmingham, Ala.
On A. B. & A. Right of Way
Rare opportunities for manufacturing in the heart of the South's most progressive section.
A. B. & A. is liberal in its policy and offers every inducement to industrial enterprises.
Address Atlanta, Birmingham & Atlantic R. R.
ATLANTA, GA.

THE WEST POINT ROUTE

Atlanta & West Point Railroad
THE WESTERN RAILWAY OF ALABAMA
Offers excellent locations for
Truck, Fruit, Stock and General Farming
Available Factory Sites. Abundance of Raw Material and Good Transportation Facilities
Write for information.
E. S. CENTER, General Agent, ATLANTA, GA.

Attractive Factory Sites ON THE Illinois Central Railroad

For full particulars address the undersigned

Free books of information on farm lands issued by the
Illinois Central Railroad

ABOUT THE SOUTH

MISSISSIPPI—A WONDERFUL AGRICULTURAL STATE

LOUISIANA—NATURE'S GARDEN SPOT

MR. FARMER, THE YAZOO-MISSISSIPPI DELTA
IS CALLING YOU

THE PHILOSOPHY OF A NORTH MISSISSIPPI
FARM

SOUTH MISSISSIPPI, THE SETTLER'S CHANCE

Everyone who would like a Southern home or investment should have a
copy of one or all of these books. For free copies address

J. C. CLAIR

Industrial and Immigration Commissioner

ILLINOIS CENTRAL RAILROAD COMPANY

135 East 11th Place, CHICAGO, ILL.

To the MANUFACTURER and DISTRIBUTOR

Abundant supplies of coal, coke, iron, timber and
other raw materials lie in the regions of Georgia and
Alabama which are traversed by the

Central of Georgia Railway

Cheap electric power, numerous undeveloped water-
powers, good home markets and excellent shipping
facilities. Therefore, manufacturing conditions are
ideal.

Many of the cities on the Central of Georgia Railway
occupy advantageous positions for distributing ware-
houses, and a number of the larger northern and
eastern manufacturers supply their southeastern
trade from branch houses in these cities.

Full and detailed information upon application.

J. M. MALLORY, Industrial Agent
SAVANNAH, GEORGIA



Residual Kaolin Mine, Dillsboro, N. C.

Cement Plant, Leeds, Ala.

Factory
Sites

Business
Locations

Southern
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and Investments

along the

Southern Railway System

Choice Locations in Eleven States

Information Free

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Whitehall House
London, S. W. England

Southern Ry. — Mobile & Ohio R. R. — Southern Ry. in Mississippi — Georgia Southern & Florida Ry.



Tennessee Producers Marble Quarry near Knoxville.

Brown Iron Ore Washing Plant, Russellville, Ala.

Wide Range of Opportunities in the Clinchfield Territory

The section of the country through which the Carolina, Clinchfield & Ohio Railroad runs presents opportunities for manufacturing and other industrial enterprises so vast and varied in proportions and in form that the man who visits it for the first time is certain to be astounded at the unsuspected possibilities uncovered to his view.

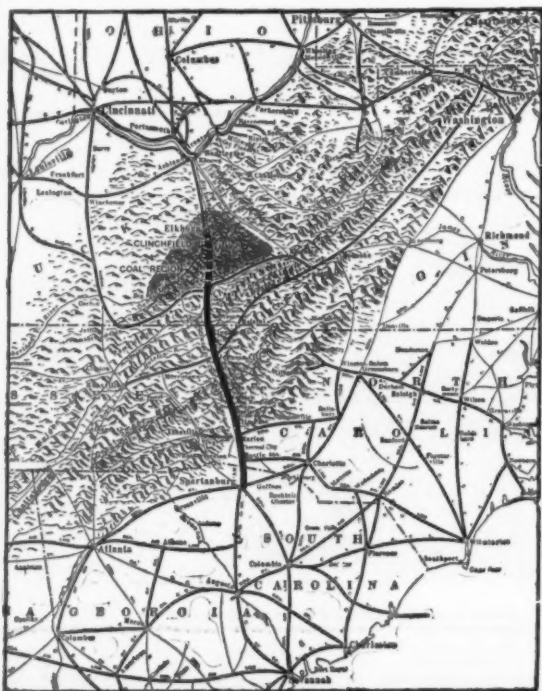
In mining there is coal, iron, feldspar, kaolin, barytes, limestone, and a number of other minerals of greater or less importance, and all in such quantities as to create a promising field for profit.

In timber there are all the hardwoods that grow in the United States and many of the soft variety that are becoming very scarce in other parts of the country. There are opportunities for profit in saw mills, planing mills, wagon factories, sash, door and blind mills, handle, spoke and hub factories, furniture factories, chair factories—in short, in all kinds of factories that make use of any of the many kinds of wood to be found there.

In cotton manufacturing there are many opportunities, for in no other section can the raw cotton be brought so cheaply into touch with cheap coal, an abundance of water power, and an unlimited amount of high-class native labor.

For agriculture all kinds of staple crops—grains, grasses—grow prolifically, while cabbage, potatoes, beans and other vegetables produce most abundantly. Apples and peaches here reach their highest state of perfection, and the orchard is destined to become the most profitable portion of the farm.

Cattle raising is found to be profitable wherever tried, and some of the finest horses and mules grown in the country have been bred and matured in this general section.



Write for our booklet, "The Land of Opportunities," and you will find further particulars concerning the things mentioned here.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

R. F. BREWER, Industrial Agent

Johnson City, Tenn.

Florida's Raw Materials for Factories

Florida possesses raw material of a kind and to an extent that justify early investigation by manufacturers.

A large part of its principal raw materials has for years been shipped out of Florida in bulk.

These resources have been, comparatively speaking, scarcely utilized for the manufacture of many products that could be made within the State, and it is timely to call attention to the rapid progress Florida is making and the profitable openings for new plants. The value of manufactured products in Florida increased 112.7 per cent. in the last decade.

The census figures show a growth in population of 42 per cent. for this State in 10 years, while Florida is also enjoying a steady advance in commercial prosperity.

There is being created within the State itself, therefore, a large and growing demand for supplies and necessities of every character.

This offers a splendid home market, while rail and water transportation facilities, sufficient for every need, bring the markets of the world within reach.

While Florida timber is already widely known, many sections of the State have large areas of virgin cypress and pine which can be worked into important products. This offers innumerable possibilities for manufacturers, and the hardwoods, some of them remarkably quick growers, as yet but little known to the trade, are destined to become of great value.

The underlying limestone throughout the State, which has been commented on so favorably by the United States Geological Survey, would make a Portland cement manufacturing plant an almost certain profitable investment. At present there is no such plant in the State.

While Florida's supremacy in naval stores and phosphates is well known, these vast resources in which the State abounds continue to offer limitless possibilities for manufactures.

Sugar manufacturing enterprises will find opportunities here that are not to be excelled anywhere.

The list is a long one. We shall be glad to supply further details.

Florida East Coast Railway

J. E. INGRAHAM, Vice-President

ST. AUGUSTINE, FLA.

Fruit and Tobacco

Exceptional Opportunities in West Virginia

Only within recent years, comparatively speaking, it was found that certain counties in West Virginia possessed the combination of soil and climatic conditions most suitable for the production of apples in the greatest abundance and of the finest quality.

Now the State is an important factor in the apple industry of the country.



A West Virginia Peach Orchard.



Big Burley Tobacco Market, Huntington, W. Va.

Even more recently it was discovered that the chert lands along the summits of the high hills of Hampshire and its neighboring counties, long held to be entirely worthless, could produce peaches not to be surpassed by any soil to be found anywhere in the country.

Now, for two and a half months each autumn, trainloads of peaches daily leave Romney and other stations in West Virginia for the Eastern markets, where they bring top prices.

For years in certain counties in the southwestern part of the State a few farmers raised small patches of tobacco in a desultory way, and only within the last four or five years it came to be realized that in a number of those counties the soil was adapted to the production of the highest grade of Burley tobacco.

But once discovered, the fact was put to use, and now the production of Burley tobacco in eight of those counties aggregates something like twenty million pounds annually.

The Baltimore & Ohio Railroad runs through five of these counties, likewise through those that produce the bulk of the apples and peaches grown in West Virginia.

The Baltimore & Ohio puts the growers of apples, peaches and tobacco in close touch with the markets, and enables them to get the highest possible prices for their products.

These same lands and other lands in the same sections are also adaptable to general agricultural purposes—good for grain, grasses, potatoes, truck of all kinds—highly productive under a proper system of intensive farming.

The Industrial and Agricultural Departments of this railroad will furnish detailed information to inquirers.

Baltimore & Ohio Railroad

J. H. STEWART, Agricultural Agent
Morgantown, W. Va.

W. W. WOOD, Industrial Agent
Baltimore, Md.

The Splendid Hunting Preserves of Florida's Hill Country

The historic Capital—Tallahassee—is set amidst a series of rolling areas interspersed with beautiful lakes and dense forest growth. Immense Live Oaks, Magnolias, Pine, Hickory, Beech, Gum and Mountain Oaks present a delightfully picturesque situation.

The area offers to the Huntsman peculiar and divers attractions. Possibly nowhere else in the South, readily accessible to transportation, can be found such a variety of game. In these vast forests and along the innumerable lakes and streams Deer, Fox, Wild Turkey, Duck and Quail abound in large quantities. The Duck and Quail shooting is exceptionally fine.

Splendid sand-clay auto roads radiate from Tallahassee in all directions, and over these all parts of the district are easily and quickly reached.

Scattered throughout the area the numerous lakes and streams afford excellent fishing. Bass, Silver Trout, Red Bream, etc., offer rare sport.

The rolling country has provided a golf course second to none in beauty and natural conditions. This is an added attraction for the lover of golf.

For your winter vacation try the hunting, golfing and fishing in the Hills of Leon.

The climate is a delightful asset.

For further information, address

SEABOARD AIR LINE RAILWAY

The Progressive Railway of the South

J. A. PRIDE, General Industrial Agent

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- Abrasive Materials.**
Carborundum Co., Niagara Falls, N. Y.
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- Agricultural Implements.**
Myers & Bro., F. E., Ashland, O.
- Air Compressors. (Stationary and Portable.)**
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Chicago Pneumatic Tool Co., Chicago, Ill.
Clayton Air Compressor Works, Cambridge, Mass.
General Electric Co., Schenectady, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Laidlaw-Dunn-Gordon Co., Cincinnati, Ohio.
Union Steam Pump Co., Battle Creek, Mich.
- Aluminum Products. (Bars, Sheets, Tubes.)**
Aluminum Company of America, Pittsburgh, Pa.
- Ammonia Valves and Fittings.**
Frick Co., The, Waynesboro, Pa.
York Mfg. Co., York, Pa.
- Anti-Friction Metals.**
Balleby-Lobby Co., Charleston, S. C.
Dodge Mfg. Co., Mishawaka, Ind.
Wolff Metal Co., Cincinnati, Ohio.
- Architects.**
Diehl, Wm., Newton, Norfolk, Va.
Gatlin, W. R., Hopkinsville, Ky.
Hunt, R. H., Chattanooga, Tenn.
James, Fred. J., Tampa, Fla.
Milburn, Heister & Co., Washington, D. C.
Robinson, W. P., Greensboro, N. C.
Serrine, J. E., Greenville, S. C.
- Architects' Supplies.**
Starrett Co., L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.
- Architectural Iron Work.**
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Schreiber & Sons, The, L., Cincinnati, O.
Snead Architectural Iron Wks., Louisville, Ky.
- Arc Lamps. (See Lamps) [Arc and Incandescent.]**
- Art Glass.**
Biswanger & Co., Memphis, Tenn.
- Asbestos.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Asbestos Products.**
Asbestos Protected Metal Co., Beaver Falls, Pa.
- Asphalt.**
Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburg, Pa.
U. S. Asphalt Refining Co., New York, N. Y.
- Asphalt Mixers.**
Erie Machine Shops, Erie, Pa.
- Asphalt Paving Plants.**
Cummer & Son Co., F. D., The, Cleveland, Ohio.
- Auctioneers.**
Freeman & Co., Samuel T., Philadelphia, Pa.
- Automobiles. (Electric Passenger.)**
General Vehicle Co., Long Island City, N. Y.
- Automobiles. (Second Hand.)**
Mar-Del Mobile Co., Baltimore, Md.
- Axles. [See Car Wheels, Axles and Trucks.]**
- Babbit Metal. [See Anti-Friction Metal.]**
- Balls.**
Fanner Mfg. Co., The, Cleveland, Ohio.
- Bakelite Dielect.**
Continental Fibre Co., Newark, Del.
- Bakers' Machinery.**
Lynn-Superior Co., The, Cincinnati, O.
- Bankers and Brokers.**
Breed, Elliott & Harrison, Cincinnati, Ohio.
Delaware Trust Co., Wilmington, Del.
Electric Bond & Share Co., New York, N. Y.
Glenn, W. S., Springfield, S. C.
Halsey & Co., N. W., New York, N. Y.
Isaman & Co., F. J., New York, N. Y.
Mercantile Trust & Deposit Co., Balto., Md.
New First National Bank, Columbus, O.
Nurven & Co., John, Chicago, Ill.
Peabody, Houghteling & Co., Chicago, Ill.
Southern States Develop't Co., New York, N. Y.
Tillotson and Wolcott Co., The, Cleveland, Ohio.
- Banks.**
First National Bank, Baltimore, Md.
First Nat'l Bank, of Key West, Key West, Fla.
First National Bank, Richmond, Va.
Merchants-Mechanics' Nat'l Bank, Baltimore, Md.
New First National Bank, Columbus, Ohio.
National Exchange Bank, Baltimore, Md.
Provident Savings Bank & Trust Co., Cincinnati, O.
- Bank and Office Railings and Grilles. (Iron)**
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggett & Co., Baltimore, Md.
Meyers Mfg. Co., F. J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
- Barges.**
American Bridge Co., of New York, N. Y.
- Bar Iron. (Refined and Galvanized.)**
Bourne-Fuller Co., The, Cleveland, Ohio.
Carnegie Steel Co., Pittsburgh, Pa.
Lackawanna Steel Co., Lackawanna, N. Y.
- Bars, Wire, Wire Fabric, etc. (For Reinforced Concrete.)**
American Steel & Wire Co., Chicago, Ill.
Cincinnati Iron & Steel Co., Cincinnati, O.
Full States Steel Co., Birmingham, Ala.
Hoffman & Co., Inc., R. O., Baltimore, Md.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Laclede Steel Co., St. Louis, Mo.
- Bead. (Metal Corner.)**
Penn Metal Co., Boston, Mass.
- Bearings. (Oilless.)**
Metalline Co., Long Island City, N. Y.
- Bedford Stone.**
Bedford Steam Stone Works, Bedford, Ind.
- Bells and Gongs.**
National Tube Co., Pittsburgh, Pa.
- Belt. (Leather, Canvas, Rubber.)**
American Supply Co., Providence, R. I.
Balleby-Lobby Co., Charleston, S. C.
Baltimore Belting Co., Baltimore, Md.
Cameron & Barkley Co., Charleston, S. C.
Chesapeake Belting Co., Baltimore, Md.
Druid Oak Belting Co., Inc., Baltimore, Md.
Gandy Belting Co., Baltimore, Md.
- Belting. (Chain.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Calwell & Sons Co., H. W., Chicago, Ill.
Jeffery Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown, (Philadelphia) Pa.
- Belting. (Cotton.)**
Scananavia Belting Co., New York, N. Y.
- Belt Conveyors.**
Jeffery Mfg. Co., Columbus, O.
Scananavia Belting Co., New York, N. Y.
- Belt Dressing.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Gandy Belting Co., Baltimore, Md.
Graton & Knight Mfg. Co., Worcester, Mass.
Philadelphia Belting Co., Philadelphia, Pa.
Scananavia Belting Co., New York, N. Y.
- Belt Lacing and Supplies. [See Belting. Leather, Canvas, Rubber.]**
- Bicarbonate Soda. (Sap Stain Lumber Dip.)**
Church & Dwight Co., New York, N. Y.
Mathieson Alkali Works, Saltville, Va.
- Blackboards. (Slate.)**
East Bangor Cong. Slate Co., The, East Bangor, Pa.
Johnson, E. J., New York, N. Y.
- Blocks. (Paving Grooved.)**
American Ceresote Works, New Orleans, La.
- Block Fillers.**
Barber Asphalt Paving Co., Phila. Pa.
Barrett Mfg. Co., Phila. Pa.
Standard Oil Co., Newark, N. J.
U. S. Asphalt Refining Co., New York, N. Y.
- Blowers and Exhaust Fans.**
American Blower Co., Detroit, Mich.
Buffalo Forge Co., Buffalo, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
General Electric Co., Schenectady, N. Y.
Green Fuel Economizer Co., Matteawan, N. Y.
Raymond Bros. Impact Pair, Co., Chicago, Ill.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Boilers.**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Babcock & Wilcox Co., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Casey-Hedges Co., Chattanooga, Tenn.
Chattanooga Boiler & Tank Co., Chat'ta, Tenn.
Chattanooga Boiler Works, Coatesville, Pa.
Cole Mfg. Co., R. D., Newnan, Ga.
Erie City Iron Works, Erie, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Harris Bros. Co., Chicago, Ill.
Hartley Boiler Works, Montgomery, Ala.
Keeler Co., E., Williamsport, Pa.
Keystone Boiler & Foundry Co., Columbia, Pa.
Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
Loudard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Ir. Works, Burlington, Ia.
New York Central Iron Works Co., Hagerstown, Md.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Schofield Iron Works, Macon, Ga.
Southern Engine & Boiler Works, Jackson, Tenn.
Valk & Murdoch Iron Works, Charleston, S. C.
Vogt Machine Co., Henry, Louisville, Ky.
Walsh & Weidner Boiler Co., Chattanooga, Tenn.
- Boiler Covering.**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
- Boiler Graphite.**
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Boiler Tubes. [See Tubes, Boiler.]**
- Bolts, Nuts, Rivets, Studs and Washers.**
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Milton Mfg. Co., Milton, Pa.
Progressive Mfg. Co., Torrington, Conn.
Republic Iron & Steel Co., Youngstown, O.
Upon Nut Co., The, Cleveland, O.
- Bonds. (Surety, etc.)**
Fidelity & Deposit Co. of Balto., Baltimore, Md.
- Bottling Outfits.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brass Goods.**
Balleby-Lobby Co., Charleston, S. C.
Buckeye Iron & Brass Works, Dayton, O.
Lunkenheimer Co., The, Cincinnati, Ohio.
Powell Co., Wm., Cincinnati, O.
- Brass Railing and Grilles.**
Newman Mfg. Co., Cincinnati, Ohio.
- Brewers' Machinery.**
Vilter Mfg. Co., Milwaukee, Wis.
- Brick. (Acid.)**
Hood Brick Co., B. Mifflin, Atlanta, Ga.
- Brick. (Building.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
Hood Brick Co., B. Mifflin, Atlanta, Ga.
Hydraulic Press Brick Co., St. Louis, Mo.
Kingsport Brick Corp., Johnson City, Tenn.
Scott Brick Co., Alex. A., Knoxville, Tenn.
Southern Face Brick Exchange, Birmingham, Ala.
Standard Brick Co., Macon, Ga.
- Brick. (Enamelled.)**
Am. Enamelled Brick & Tile Co., New York, N. Y.
- Brick. (Fire.)**
Brookhaven Pressed Brick & Mfg. Co., Brookhaven, Miss.
- Brick. (Paving.)**
Carlisle Paving Brick Co., Portsmouth, O.
Copeland-Ingles Shale Brick Co., Birmingham, Ala.
Dunn Wire-Out-Lag Brick Co., Conneaut, Ohio.
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Brick. (Silica.)**
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Copeland-Ingles Shale Brick Co., Birmingham, Ala.
Dunn Wire-Out-Lag Brick Co., Conneaut, Ohio.
Southern Clay Mfg.

- Contractors.** (Hydro-Electric Developments.)
Requarth Co., C. W., Charlotte, N. C.
- Contractors.** (Water Supply.)
Layne & Bowler Co., Houston, Tex.
- Contractor's Machinery and Supplies.** [See also Hoisting Machinery.]
American Clay Machinery Co., The Bucyrus, Ohio.
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Austin Machinery Co., W. E., Atlanta, Ga.
Austin Mfg. Co., Chicago, Ill.
Byers Mach. Co., The John F. Ravenna, O.
Contractors Mch. & Supply Co., Pittsburgh, Pa.
Curd, Geo. B., Cincinnati, O.
Farquhar Mfg. Co., Ltd., A. B., York, Pa.
Flory Mfg. Co., S., Bangor, Pa.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Marine Metal & Supply Co., New York, N. Y.
Muhlenberg Co., Alex. N., Baltimore, Md.
Monaghan Mch. Co., Chicago, Ill.
National Hoisting Engine Co., Harrison, N. J.
Oliver Mfg. Co., Wm. J., Knoxville, Tenn.
Pipe & Contractors' Supply Co., New York, N. Y.
Sherwood, E. C., New York, N. Y.
Southern Mch. & Equipment Co., Lynchburg, Va.
Sterling Machinery Co., New York, N. Y.
- Conveying and Elevating Machinery.**
Austin Machinery Co., W. E., Atlanta, Ga.
Bartlett & Snow Co., C. O., Cleveland, O.
Caldwell & Son Co., H. W., Chicago, Ill.
Flory Mfg. Co., S., Bangor, Pa.
Guarantee Construction Co., New York, N. Y.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Link-Belt Co., Nicetown, (Philadelphia) Pa.
Mellish Gravit Carrier Co., Ellwood City, Pa.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
- Copperage, Stock and Box Shook Machinery.**
Gerlach Co., Peter, Cleveland, O.
- Coppersmith.**
Hoffman-Ahlbers Co., Cincinnati, Ohio.
McMillan Bros., Jacksonville, Fla.
- Cordage.**
American Mfg. Co., Brooklyn, N. Y.
Broderick & Bascom Rope Co., St. Louis, Mo.
Columbian Rope Co., Auburn, N. Y.
International Cotton Mills, New York, N. Y.
Plymouth Cordage Co., North Plymouth, Mass.
St. Louis Cordage Mills, St. Louis, Mo.
Waterbury Co., New York, N. Y.
- Core Ovens.**
Oren Equipment & Mfg. Co., The, New Haven, Conn.
- Corner Bead.** (Metal.)
Penn Metal Co., Boston, Mass.
- Corn-Mill Machinery.**
Norfolk & Marmon Co., Indianapolis Ind.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Star Co., H. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Cotton Duck.**
International Cotton Mills, New York, N. Y.
- Cotton Oil and Products.**
American Cotton Oil Co., New York, N. Y.
- Cotton Yarns.** (Commission Merchants.)
Paulson, Linkroum & Co., New York, N. Y.
- Cotton-Gin Machinery.**
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
Gibbs Machinery Co., Inc., Columbia, S. C.
Murray Co., The, Atlanta, Ga.
- Cotton-Mill Machinery.**
Draper Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.
Saco-Lowell Shop, Boston, Mass.
Whitinsville Spinning Ring Co., Whitinsville, Mass.
- Cotton-Mill Supplies.**
American Supply Co., Providence, R. I.
Whitinsville Spinning Ring Co., Whitinsville, Mass.
- Cottonseed-Oil Machinery.**
Buckeye Iron & Brass Works, Dayton, O.
Burruss Engineering Co., Atlanta, Ga.
Cardwell Machine Co., Richmond, Va.
Carver Cotton Gin Co., East Bridgewater, Mass.
Continental Gin Co., Birmingham, Ala.
French Oil Mill Machinery Co., Piqua, O.
Murray Co., The, Atlanta, Ga.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Counting and Weighing Machines.** (For Industrial Plants.)
National Scale Co., Chicopee Falls, Mass.
- Couplings.**
American Spiral Pipe Works, Chicago, Ill.
Golden's Foundry & Machine Co., Columbus, Ga.
Wood's Sons Co., T. B., Chambersburg, Pa.
- Couplings.** (Car.)
National Tube Co., Pittsburgh, Pa.
Weimer Chain & Iron Co., Lebanon, Pa.
- Couplings.** (Hose, Air, Gas, Steam and Water.)
National Tube Co., Pittsburgh, Pa.
- Couplings.** (For Reinforcing Bars.)
Marion Malleable Iron Works, Marion, Ind.
- Coverings.** (Pipe, Boiler, etc.)
John-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
- Cranes.** (Locomotive.)
American Hoist & Derrick Co., St. Paul, Minn.
Ohio Locomotive Crane Co., Bucyrus, O.
- Cranes.** (Traveling, Hand, Power, Hydraulic.)
Lane Mfg. Co., Montpelier, Vt.
Speidel, J. G., Reading, Pa.
- Crays.**
Georgia Talc Co., Asheville, N. C.
Lowell Crayon Co., Lowell, Mass.
- Crosscutting Equipment.**
Casey-Hedgoc Co., Chattanooga, Tenn.
Struthers-Wellis Co., Warren, Pa.
Walsh & Weider Boiler Co., Chattanooga, Tenn.
- Crosscutting Works.**
American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossarms and Pins.**
Western Electric Co., New York, N. Y.
- Crossarms.** (Crosscut.)
American Crosscut Wks., New Orleans, La.
Internat'l Crosscutting & Cons. Co., Galveston, Tex.
National Lumber & Crosscutting Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crossings.** [See Railroad Frogs and Switches.]
- Crosstie Machine.**
Standard Portable Saw Mill Co., New Orleans, La.
- Crossties.** (Crosscut.)
American Crosscut Works, New Orleans, La.
Internat'l Crosscut & Cons. Co., Galveston, Tex.
National Lumber & Crosscut Co., Texarkana, Ark.
Southern Crosscutting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Crosssties.** (Steel.)
Carnegie Steel Co., Pittsburgh, Pa.
- Crushed Stone.**
American Ballast Co., Knoxville, Tenn.
Balfour Quarry Co., Asheville, N. C.
Chickamauga Quarry & Construction Co., Chattanooga, Tenn.
Kirkpatrick Sand & Cement Co., Birmingham, Ala.
Weston Brook Quarry Co., Columbia, S. C.
- Crushers.** (Corn and Cob.)
Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Crushers.** (Rock.)
Austin Machinery Co., W. E., Atlanta, Ga.
Austin Mfg. Co., Chicago, Ill.
Buchanan Co., Inc., C. G., New York, N. Y.
Power & Mining Machinery Co., Cudahy, Wis.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Universal Road Mch. Co., Kingston, N. Y.
Western Wheeled Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Crushing and Pulverizing Machinery.**
Aising Engineering Co., J. R., New York, N. Y.
Austin Machinery Co., W. E., Atlanta, Ga.
Austin Mfg. Co., Chicago, Ill.
Bartlett & Snow Co., C. O., Cleveland, O.
Buchanan Co., Inc., C. G., New York, N. Y.
Grundler Pat. Crusher & Pulv. Co., St. Louis, Mo.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Works, Aurora, Ind.
Western Wheeled Scraper Co., Aurora, Ill.
Wheeling Mold & Fdry. Co., Wheeling, W. Va.
- Culvert Pipe.** (Cast Iron.)
American Cast Iron Pipe Co., Birmingham, Ala.
Clow & Sons, James H., Chicago, Ill.
Donaldson Iron Co., Ennals, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Lynchburg Foundry Co., Lynchburg, Va.
Massillon Iron & Steel Co., Massillon, Ohio.
Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
Wood & Co., R. D., Philadelphia, Pa.
- Culverts.** (Corrugated Metal.)
American Sheet & Tin Plate Co., Pittsburgh, Pa.
Arnco Culvert Pub. Bureau, Cincinnati, O.
Atlas Metal Works, Dallas, Tex.
Birmingham Metal Products Co., Birmingham, Ala.
Canton Culvert Co., The, Canton, O.
Dixie Culvert & Metal Co., Atlanta, Ga.
Hunt Co., C. W., Inc., West New Brighton, N. Y.
Harry Bros. Co., Newport, O.
Lone Star Culvert Co., Houston, Tex.
National Corrugated Culvert Mfg. Co., Warren, Pa.
New Orleans Roofing & Metal Wks., New Orleans, La.
Salsbury Metal Culvert Co., Inc., Salisbury, N. C.
Tennessee Metal Culvert Co., Nashville, Tenn.
Virginia Metal & Culvert Co., Inc., Roanoke, Va.
- Culverts.** (Vitrified Pipe.)
Bibb Sewer Pipe Co., Macon, Ga.
Southern Sewer Pipe Co., Birmingham, Ala.
Stevens Sons Co., H., Macon, Ga.
- Cupola Furnaces.**
Faxon Co., J. W., Philadelphia, Pa.
- Curb Protector.** (Steel.)
Steel Protected Concrete Co., Philadelphia, Pa.
- Cuts.** (Half-tone, Line, etc.)
Baltimore-Md. Engraving Co., Baltimore, Md.
- Cutter Heads.** (Woodworking.)
Shimer & Sons, Samuel J., Milton, Pa.
- Cutter Grinders.**
Vitrified Wheel Co., Westfield, Mass.
- Dams.** (Reinforced Concrete.)
Berry-Fortune Construction Co., Eatonton, Ga.
- Derricks and Derrick Fittings.**
American Hoist & Derrick Co., St. Paul, Minn.
Byers Mach. Co., The John F. Ravenna, O.
Hayward Co., The, New York, N. Y.
Monaghan Machine Co., Chicago, Ill.
Sagen Derrick Co., Chicago, Ill.
- Designers and Illustrators.** (Printed Matter.)
Baltimore, Md. Engraving Co., Baltimore, Md.
- Distilling Apparatus.**
Hoffman-Ahlbers Co., Cincinnati, Ohio.
- Ditching Machinery.**
American Hoist & Derrick Co., St. Paul, Minn.
American Locomotive Co., New York, N. Y.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Marion-Osgood Co., Marion, O.
Marion Steam Shovel Co., Marion, O.
Monaghan Machine Co., Chicago, Ill.
Williams Co., The, G. H., Cleveland, O.
- Doors.** (Steel Rolling.)
Kinneair Mfg. Co., Columbus, O.
- Doors.** (Tin Clad.)
Victor Mfg. Co., Newburyport, Mass.
- Doors, Sash and Blinds.**
Columbus Iron Works, Columbus, Ga.
- Draftsmen's Supplies.**
Weber & Co., F., Philadelphia, Pa.
- Dredge Chains.**
Weimer Chain & Iron Co., Lebanon, Pa.
- Dredge Cutters.**
Norborn Engineering Co., Philadelphia, Pa.
- Dredges.** [See Excavating Machinery.]
- Drills.** (Electric.)
Fort Wayne Electric Works, Fort Wayne, Ind.
- Drills.** (Pneumatic.) [See also Drills Rock and Mining.]
Fort Wayne Electric Works, Fort Wayne, Ind.
- Drills.** (Prospecting.)
Fort Wayne Electric Works, Madison, Wis.
- Drills.** (Rock and Mining.)
Fort Wayne Electric Works, Madison, Wis.
Independent Pneumatic Tool Co., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Wicks Bros., Jersey City, N. J.
- Drills.** (Twist.)
McKenna Bros. Brass Co., Pittsburgh, Pa.
Morse Twist Drill & Mch. Co., New Bedford, Mass.
- Drive Well Points and Well Supplies.**
National Tube Co., Pittsburgh, Pa.
- Drop Forgings.**
American Spiral Pipe Works, Chicago, Ill.
- Drop Forging Machinery.**
Bliss Co. E. W., Brooklyn, N. Y.
- Dry Docks.** (Builders of)
American Bridge Co. of New York, N. Y.
- Drying Machinery.**
American Process Co., New York, N. Y.
Bailley Lobby Co., The, Charleston, S. C.
Buffalo Forge Co., Buffalo, N. Y.
Castellville, Boiler Works, Castellville, Pa.
Cummer & Son Co., F. D., The, Cleveland, Ohio
Hershey Manufacturing Co., South Boston, Mass.
Oven Equipment & Mfg. Co., The, New Haven, Conn.
Ruggles-Coles Engineering Co., New York, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Dry Kilns.**
Buffalo Forge Co., Buffalo, N. Y.
Moore Dry Kiln Co., L., Jacksonville, Fla.
- Dry Kiln Equipment.**
Moore Dry Kiln Co., L., Jacksonville, Fla.
- Dumbwaiters.** (Hand Power.)
McKenna Bros. Brass Co., Pittsburgh, Pa.
Speidel, J. G., Reading, Pa.
- Dump Wagons and Wagon Boxes.**
Troy Wagon Works Co., Troy, O.
- Dust-Collecting Systems.**
Buffalo Forge Co., Buffalo, N. Y.
King Co., F. E., Norfolk, Va.
South Atlantic Blow Pipe & Sheet Metal Co., Savannah, Ga.
- Dynamite.** (Industrial and Agricultural.)
Atlas Powder Co., Wilmington, Del.
Du Pont De Nemours Powder Co., E. I., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l Powder Co., Emporium, Pa.
- Dynamometers and Motors.**
Assets Purchasing Co., Wheeling, W. Va.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Kiering & Mathieson, New York, N. Y.
Terry Steam Turbine Co., Hartford, Conn.
Triumph Electric Co., Cincinnati, Ohio.
Western Electric Co., New York, N. Y.
- Eaves.** (Trough.)
Edwards Mfg. Co., Cincinnati, O.
Hussey & Co., C. G., Pittsburgh, Pa.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Electors.** (Sewage.)
Lunkenheimer Co., The, Cincinnati, O.
Pacific Flush Tank Co., New York, N. Y.
- Electric Machinery.** (Dynamometers, Generators, Motors, etc.)
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Machine Co., Louisville, Ky.
Crocker-Wheeler Co., Amper, N. J.
Engberg Electric & Mechanical Works, St. Joseph, Mo.
Fairbanks-Morse & Co., Atlanta, Ga.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Heer Engine Co., Portsmouth, O.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Scheiner Co., R., Philadelphia, Pa.
Schroeder Electric Co., Evansville, Ind.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Triumph Electric Co., Cincinnati, O.
Wilson Mch. Co., Harold R., St. Louis, Mo.
Wilson-Maltman Electric Co., Baltimore, Md.
- Electrical Contractors, Instruments and Supplies.**
Carroll Electric Co., Washington, D. C.
Crocker-Wheeler Co., Amper, N. J.
Economy Fuse & Mfg. Co., Chicago, Ill.
Fort Wayne Electric Works, Fort Wayne, Ind.
General Electric Co., Schenectady, N. Y.
Hill & Co., Walter E., Baltimore, Md.
John-Manville Co., H. W., New York, N. Y.
Lee Electric Co., Baltimore, Md.
Levy-Morton Co., Columbus, Ga.
Piedmont Electric Co., Asheville, N. C.
Robbins & Myers Co., Springfield, O.
Wilson-Maltman Electric Co., Baltimore, Md.
- Electric Light Plants.** (Portable.)
Schroeder Electric Co., Evansville, Ind.
- Electro-Magnet.** [See Magnet Electro.]
- Electric Vehicles.**
General Vehicle Co., Long Island City, N. Y.
- Elevating, Conveying and Power Transmission Machinery.** [See also Conveying and Elevating Machinery and Power Transmission Mch.]
- Elevators.**
American Electric Machine & Elevator Co., St. Louis, Mo.
American Machine Co., Louisville, Ky.
Atlas Machine Co., Louisville, Ky.
Curran Elevator Co., James H., Cincinnati, O.
Decatur Foundry, Furnace & Mach. Co., Decatur, Ind.
Kansas City Elevator Mfg. Co., Kansas City, Mo.
Miller Elevator Mfg. Co., Wm. A., St. Louis, Mo.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Ohio Elevator & Machine Co., Columbus, O.
Otis Elevator Co., New York, N. Y.
Ridgway & Son Co., The, Castellville, Pa.
Speidel, J. G., Reading, Pa.
Warsaw Elevator Co., Baltimore, Md.
Westbrook Elevator Co., Danville, Va.
- Elevators.** (Automatic.)
Mathews Gravity Carrier Co., Ellwood City, Pa.
- Elevators.** (Portable for Warehouses, etc.)
Economy Elevator Co., Chicago, Ill.
- Elevator Bolts.**
Upson Nut Co., The, Cleveland, O.
- Elevator Buckets.**
Caldwell & Son Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia) Pa.
- Elevator Enclosures and Cabs.**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
Dufur, Baggot & Co., Baltimore, Md.
Meyers Mfg. Co., The Fred J., Hamilton, O.
Ohio Elevator & Machine Co., The, Columbus, O.
Otis Elevator Co., New York, N. Y.
- Elevator Rope.** [See Wire Rope.]
- Elevator Safety Gates.**
American Elec. Mch. & Elevator Co., St. Louis, Mo.
Richmond Safety Gate Co., Richmond, Ind.
- Emery Wheels.** [See Grinding Wheels.]
- Engineers.**
APPRAISAL.
Day & Zimmerman, Philadelphia, Pa.
Ferree Co., The H. G., Memphis, Tenn.
Huston-Kingsley Co., Memphis, Tenn.
Maxcy, John Wharton, Houston, Tex.
- BLAST FURNACES.**
Smythe Co., The S. R., Pittsburgh, Pa.
- CHEMICAL.**
Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- CIVIL.**
Arnold Co., The, Chicago, Ill.
Blair & Drane, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Firth, Joseph, Charlotte, N. C.
Freeman, Jr., Arthur C., Norfolk, Va.
Knowles, Morris, Pittsburgh, Pa.
Maynard-Carter, Chattanooga, Tenn.
Moile, H. E., New York, N. Y.
Potter, Alexander, New York, N. Y.
Rucker, B. Parks, Chattanooga, Tenn.
Shand Engineering Co., Columbia, S. C.
Solomon-Norcross Co., Atlanta, Ga.
Stevens, Harry, Washington, D. C.
Waldo, W., Houston, Tex.
Walker Engineering Corp., Tampa, Fla.
White Companies, J. G., New York, N. Y.
- DAMS.**
Boyd, Geo. R., Savannah, Ga.
Quick, Alfred M., Baltimore, Md.
Requarth Co., C. W., Charlotte, N. C.
Spiker, William C., Atlanta, Ga.
White Companies, J. G., New York, N. Y.
- DRAINAGE AND IRRIGATION.**
Boyd, Geo. R., Savannah, Ga.
Brown & Clarkson, Washington, D. C.
Bryant, Glauco A., Wilson, N. C.
Cory-Harrison & Co., San Antonio, Tex.
Cummings, F. N. (Taylor), Claremont, Va.
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Knowles, Morris, Pittsburgh, Pa.
McCrary Bros. & Cheves, Inc., Charleston, S. C.
Perkins, Edmund T., Engineering Co., Chicago, Ill.
Walker Engineering Corp., Tampa, Fla.
Wright Engineering Co., San Antonio, Tex.
- EFFICIENCY.**
Crosby, Walter W., Baltimore, Md.
Institute of Industrial Research, Washington, D. C.
Quick, Alfred M., Baltimore, Md.
- ELECTRICAL.**
Arnold Co., The, Chicago, Ill.
B. E. S. Engineering Co., Houston, Tex.
Crocker-Wheeler Co., Amper, N. J.
Keilholz, P. O., Baltimore, Md.
Levy-Morton Co., Columbus, Ga.
Lide, Martin J., Birmingham, Ala.
Moile, H. E., New York, N. Y.
Rucker, B. Parks, Charlotte, N. C.
Stone & Webster Engr. Corp., Boston, Mass.
Tucker & Laxton, Charlotte, N. C.
White, Gilbert O., Charlotte, N. C.
Wilson-Maltman Electric Co., Baltimore, Md.
- ELECTRIC LIGHTS AND POWER PLANTS.**
Dabney Engineering Co., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Fuller-Coutt Co., St. Louis, Mo.
Graves Engineering Co., Inc., New York, N. Y.
Huston-Kingsley Co., Memphis, Tenn.
Keilholz, P. O., Baltimore, Md.
Levy-Morton Co., Columbus, Ga.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Engr. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.
White, Gilbert O., Charlotte, N. C.
Wilson-Maltman Electric Co., Baltimore, Md.
Wright Engineering Co., San Antonio, Tex.
- GAS.**
Ford, Bacon & Davis, New York, N. Y.
- GARBAGE DISPOSAL.**
Baylis, John R., Birmingham, Ala.
- GEOLOGICAL.**
Brown & Clarkson, Washington, D. C.
Davis, Geo. C., Philadelphia, Pa.
Froehling & Robertson, Richmond, Va.
Grimsley, G. P., Martinsburg, W. Va.
Institute of Industrial Research, Washington, D. C.
Maynard-Carter, Chattanooga, Tenn.
- HYDRO-ELECTRIC.**
Baylis, John R., Birmingham, Ala.
Brown & Clarkson, Washington, D. C.
Fuller-Coutt Co., St. Louis, Mo.
Hove, Charles F., Bacon, Ga.
Knowles, Morris, Pittsburgh, Pa.
Maxcy, John Wharton, Houston, Tex.
Quick, Alfred M., Baltimore, Md.
Requarth Co., C. W., Charlotte, N. C.
Rucker, B. Parks, Charlotte, N. C.
Scotfield Engineering Co., Philadelphia, Pa.
Srinne, J. E., Greenville, S. C.
Solomon-Norcross Co., Atlanta, Ga.
Spiker, William C., Atlanta, Ga.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.
- ICE AND REFRIGERATING.**
B. E. S. Engineering Co., Houston, Tex.
Wright Engineering Co., San Antonio, Tex.
- INDUSTRIAL PLANT.**
Day & Zimmerman, Philadelphia, Pa.
Ferree Co., The H. G., Memphis, Tenn.
Gillman, Harry L., Boston, Mass.
Guarantee Construction Co., New York, N. Y.
Institute of Industrial Research, Washington, D. C.
Kent, Robert S., Brooklyn, N. Y.
Rucker, B. Parks, Charlotte, N. C.
Scotfield Engineering Co., Philadelphia, Pa.
Shearer, C. E., Memphis, Tenn.
Steinmetz, C. M., Washington, D. C.
Stone & Webster Engr. Corp., Boston, Mass.
Stevens, Harry, Washington, D. C.
Summers & Co., L. L., Chicago, Ill.
White Companies, J. G., New York, N. Y.
Wilson-Maltman Electric Co., Baltimore, Md.
- INSPECTIONS AND TESTS.**
Blair & Drane, Charlotte, N. C.
Crosby, Walter W., Baltimore, Md.
Froehling & Robertson, Richmond, Va.
Hill, Nicholas S., Jr., New York, N. Y.
Hunt & Co., Robert W., Chicago, Ill.
Institute of Industrial Research, Washington, D. C.
Pittsburgh Testing Laboratory, Pittsburgh, Pa.
- LANDSCAPE.**
Berkmans Co., P. J., Augusta, Ga.
Blair & Drane, Charlotte, N. C.
Crosby, Walter W., Baltimore, Md.
Cummings, F. N. (Taylor), Claremont, Va.
- LIGHTING.**
Ford, Bacon & Davis, New York, N. Y.
Fuller-Coutt Co., St. Louis, Mo.
McCrary & Co., J. B., Atlanta, Ga.
Rucker, B. Parks, Charlotte, N. C.
- LUMBER PLANTS.**
Steinmetz, C. M., Washington, D. C.

Engineers.**MECHANICAL.**

Arnold Co., The, Chicago, Ill.
Grosk, Irwin D., Chicago, Ill.
Kent Robert S., Brooklyn, N. Y.
Lide, Martin J., Birmingham, Ala.
Steinmetz, C. M., Washington, D. C.
Stevens, Harry, Washington, D. C.
Tucker & Laxton, Charlotte, N. C.

MINING.

Brown & Clarkson, Washington, D. C.
Grimley, G. P., Martinsburg, W. Va.
Haney, Marshall, Bridgewater, Va.
Jones, E. M., Chattanooga, Tenn.
Maynard-Carter, Chattanooga, Tenn.

MUNICIPAL.

Anderson & Christie, Charlotte, N. C.
Blair & Drake, Charlotte, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Cory-Harrison & Co., San Antonio, Texas.
Dabney Engineering Corp., Memphis, Tenn.
Elrod, Henry E., Dallas, Texas.
Firth, Joseph, Charlotte, N. C.
Freeman, Jr., Arthur C., Norfolk, Va.
Graves Engineering Co., Inc., New York, N. Y.
Knowles, Morris, Philadelphia, Pa.
McCrady Bros. & Cheves, Inc., Charleston, S. C.
McCrady Co., J. B., Atlanta, Ga.
Pew, Arthur, Atlanta, Ga.
Shand Engineering Co., Columbia, S. C.
Walker Engineering Corp., Tampa, Fla.
White, Gilbert C., Charlotte, N. C.

PAVING AND ROAD.

Anderson & Christie, Charlotte, N. C.
Blair & Drake, Charlotte, N. C.
Bryant, Glaucaus A., Wilson, N. C.
Crosby, Walter W., Baltimore, Md.
Elrod, Henry E., Dallas, Texas.
Firth, Joseph, Charlotte, N. C.
Fuller-Coult Co., St. Louis, Mo.
Institute of Industrial Research, Washington, D. C.
McCrady Bros. & Cheves, Inc., Charleston, S. C.
Shand Engineering Co., Columbia, S. C.
White, Gilbert C., Charlotte, N. C.

PUBLIC SERVICE PROPERTIES.

Day & Zimmerman, Philadelphia, Pa.
Perree Co., The H. G., Memphis, Tenn.
Ford, Bacon & Davis, New York, N. Y.
Gilman, Harry L., Boston, Mass.
Graves Engineering Co., Inc., New York, N. Y.
Maxcy, John Wharton, Houston, Tex.
Scotfield Engineering Co., Philadelphia, Pa.
Stone & Webster Engr. Corp., Boston, Mass.
White Companies, J. G., New York, N. Y.

REINFORCED CONCRETE. (Bridges, Buildings, etc.)

Cauldwell-Wingate Co., Atlanta, Ga.
Cummings, F. N. (Taylor), Claremont, Va.
Foster-Creighton-Gould Co., Nashville, Tenn.
Guarantee Construction Co., New York, N. Y.
Luten, Daniel B., Indianapolis, Ind.
Potter, Alexander, New York, N. Y.
Requarth Co., C. W., Charlotte, N. C.
Savannah Eng. & Construction Co., Savannah, Ga.
Spiker, William C., Atlanta, Ga.
Steinmetz, C. M., Washington, D. C.
Tucker & Laxton, Charlotte, N. C.
White Companies, J. G., New York, N. Y.

RIVER AND HARBOR.

Gilman, Harry L., Boston, Mass.

SEWERAGE AND WATERWORKS.

Anderson & Christie, Charlotte, N. C.
Bryant, Glaucaus A., Wilson, N. C.
Brown & Clarkson, Washington, D. C.
Crosby, Walter W., Baltimore, Md.
Dabney Engineering Corp., Memphis, Tenn.
Firth, Joseph, Charlotte, N. C.
Ford, Bacon & Davis, New York, N. Y.
Freeman, Jr., Arthur C., Norfolk, Va.
Graves Engineering Co., Inc., New York, N. Y.
Hill, Jr., Nicholas S., New York, N. Y.
Huston-Kingley Co., Memphis, Tenn.
Knowles, Morris, Philadelphia, Pa.
Maxcy, John Wharton, Houston, Tex.
Mayer, J. H., Birmingham, Ala.
Miller, Hiram Allen, Boston, Mass.
Myers, E. W., Greensboro, N. C.
Pew, Arthur, Atlanta, Ga.
Potter, Alexander, New York, N. Y.
Quick, Alfred M., Baltimore, Md.
Stevens, Harry, Washington, D. C.
Walker Engineering Corp., Tampa, Fla.
Washburn Co., A. H., Charlotte, N. C.
White Companies, J. G., New York, N. Y.
Wright Engineering Co., San Antonio, Tex.

STEEL WORK AND ROLLING MILLS.

Smythe Co., The S. R., Pittsburgh, Pa.

STRUCTURAL STEEL.

Foster-Creighton-Gould Co., Nashville, Tenn.
Freeman, Jr., Arthur C., Norfolk, Va.
Shearer, C. E., Memphis, Tenn.
Solomon-Norcross Co., Atlanta, Ga.
Spiker, William C., Atlanta, Ga.

THEATRE CONSTRUCTION.

Gatlin, W. R., Hopkinsville, Ky.

Engines.

Dake Engine Co., Grand Haven, Mich.

COMPRESSED AIR.

Dake Engine Co., Grand Haven, Mich.

GAS AND GASOLINE.

Affiliated Manufacturers Co., Milwaukee, Wis.
Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
Cooper Co., C. & G., Mt. Vernon, Ohio.
Gibbs Machinery Co., Inc., Columbia, S. C.
Heer Engine Co., Portsmouth, O.
Mietz, A., New York, N. Y.
Modern Equipment Co., Savannah, Ga.
Otto Gas Engine Works, Philadelphia, Pa.
Southern Engine & Boiler Works, Jackson, Tenn.
Struthers-Wells Co., Warren, Pa.
Van Duzen, Royce, Co., Columbus, O.
Westinghouse Machine Co., The, Pittsburgh, Pa.

Oil.

Bolinders Co., The, New York, N. Y.
Fairbanks-Morse & Co., Atlanta, Ga.
Heer Engine Co., Portsmouth, Ohio.
Mietz, A., New York, N. Y.
Snow Steam Pump Works, The, New York, N. Y.

STEAM.

Allis-Chalmers Manufacturing Co., Milwaukee, Wis.
American Hoist & Derrick Co., St. Paul, Minn.
Ball Engine Co., Erie, Pa.
Buffalo Forge Co., Buffalo, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Cooper Co., C. & G., Mt. Vernon, Ohio.
Dake Engine Co., Grand Haven, Mich.
Engberg Electric & Mechanical Works, St. Joseph, Mo.

Erie City Iron Works, Erie, Pa.
Farquhar Co., Ltd. A. B., York, Pa.
Gibbs Machinery Co., Inc., Columbia, S. C.
Griffith & Wedge Co., The, Zanesville, O.
Griscom-Russell Co., New York, N. Y.
Harris Bros. Co., Chicago, Ill.
Houston, Stanwood & Gamble, Co., Cincinnati, O.
Ide & Sons, A. L., Springfield, Ill.
Lefell & Co., James, Springfield, O.
Lombard Iron Works, Augusta, Ga.
Mecklenburg Iron Works, Charlotte, N. C.
Murray Iron Works Co., Burlington, Ia.
Phoenix Iron Works Co., Meadville, Pa.
Price Machinery Co., S. M., Norfolk, Va.
Schoffel Iron Works, Macon, Ga.
Sturtevant Co., F. F., Hyde Park, Boston, Mass.
Vilter Mfg. Co., Milwaukee, Wis.
Westinghouse Machine Co., Pittsburgh, Pa.

Young & Selden Co., Baltimore, Md.

Excavating Machinery.

American Clay Machinery Co., The, Bucyrus, Ohio.
American Locomotive Co., New York, N. Y.
Byers Mach. Co., The John F., Ravenna, O.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., New York, N. Y.
Jeffrey Mfg. Co., Columbus, O.
Lidgerwood Mfg. Co., New York, N. Y.
Marion-Osgood Co., Marion, O.
Monahan Machine Co., Chicago, Ill.
Morris Machine Works, Baldwinville, N. Y.
National Hoisting Engine Co., Harrison, N. J.
Norhom Engineering Co., Philadelphia, Pa.
Williams Co., The G. H., Cleveland, O.

Excavators. (Trench.)

Austin Machinery Co., W. E., Atlanta, Ga.
Fairbanks Steam Shovel Co., Marion, O.
Gade Excavating Co., The, Iowa Falls, Iowa.
Hayward Co., The, New York, N. Y.
Monahan Machine Co., Chicago, Ill.

Excelsior Machinery.

Kline, Lewis T., Alpena, Mich.

Exhaust Heads.

Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.

Exhibits. (Machinery Builders' Equipment and Supplies.)

Builders' Exchange, Baltimore, Md.

Expansion Joints.

Badger & Sons Co., E. B., Boston, Mass.

Expanded Metal. [See Lath.]**Explosives.**

Atlas Powder Co., Wilmington, Del.
Du Pont de Nemours Powder Co., E. I., Wilmington, Del.
Jefferson Powder Co., Birmingham, Ala.
Keystone Nat'l. Powder Co., Emporium, Pa.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electric.)
General Electric Co., Schenectady, N. Y.
Robbins & Myers Co., Springfield, O.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]**Fastener Driving Machine. (Corrugated Joint.)**

Saranac Machine Co., Benton Harbor, Mich.

Feed-Water Heaters and Purifiers.

American Water Softener Co., Philadelphia, Pa.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Erie City Iron Works, Erie, Pa.
Griscom-Russell Co., New York, N. Y.
Murray Iron Works Co., Burlington, Ia.
National Pipe Bending Co., New Haven, Conn.
Seafie & Sons Co., Wm. B., Pittsburgh, Pa.
Stewart Heater Co., Buffalo, N. Y.

Feed-Water Heater and Purifier and Oil Separator Combined.

Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Stewart Heater Co., Buffalo, N. Y.

Felt. (Building Sheathing.)

Barrett Mfg. Co., Philadelphia, Pa.

Fencing, Entrance Gates. (Iron, Steel, Wire.)

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Dow Wire & Iron Works, Louisville, Ky.
Dufur & Co., Baltimore, Md.
New Jersey Wire Cloth Co., Trenton, N. J.
Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Machy.]

Stedman's Foundry & Machine Works, Aurora, Ind.
Vaik & Murdoch Iron Works, Charleston, S. C.

Fibre. (Vulcanized.)

Continental Fibre Co., Newark, Del.

Files.

Barnett Co., G. & H., Philadelphia, Pa.
Nicholson File Co., Providence, R. I.

Filters. (Water for Domestic and Industrial Purposes.)

American Water Softener Co., Philadelphia, Pa.
International Filter Co., Chicago, Ill.
Lynn-Superior Co., The, Cincinnati, O.
New York Con. Jewell Fil. Co., New York, N. Y.

Fire Clay. [See Brick, Fire.]**Fire Door Fixtures.**

Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.

Badger & Sons Co., E. B., Boston, Mass.

Fire Escapes.

Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Cheapeake Iron Works, Baltimore, Md.

Fire Places. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fire Sprinkling Systems.

Globe Automatic Sprinkler Co., Cincinnati, O.

Fireproof Building Construction. [See Concrete Construction.]

Fireproof Building Material.
Bannon Pipe Co., P., Louisville, Ky.
Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.

Kinnear Mfg. Co., Columbus, O.
Richmond Safety Gate Co., Richmond, Ind.
Victor Mfg. Co., Newburyport, Mass.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Fittings. (Wire Rope.)
American Steel & Wire Co., Chicago, Ill.
Waterbury Co., New York, N. Y.

Fireproofing. (Brick and Tile.)

Hood Brick Co., B. Midlin, Atlanta, Ga.

Fixtures. (Electric Lighting.)

Hill & Co., Walter E., Baltimore, Md.
Wilson-Maltman Electric Co., Baltimore, Md.

Flanges. (Iron and Steel.)

American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
American Spiral Pipe Works, Chicago, Ill.
Bart Mfg. Co., E. M., Providence, R. I.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
National Tube Co., Pittsburgh, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Wood & Co., R. D., Philadelphia, Pa.

Flexible Joints.

Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Floor Tile.

Northcross Mantel Co., W. J., Memphis, Tenn.

Flooring. (Cresosoted Block.)

Republic Cresosoting Co., Indianapolis, Ind.

Flooring. (Hardwood, Maple, Oak.)

Nashville Hardwood Flooring Co., Nashville, Tenn.
Whiting, William S., Asheville, N. C.

Flour and Grist Mill Machinery and Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.
Caldwell & Sons Co., H. W., Chicago, Ill.
Nordyke & Marmion Co., Indianapolis, Ind.
Salem Foundry & Machine Works, Salem, Va.
Starr Co., R. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.

Flue Lining.

Southern Sewer Pipe Co., Birmingham, Ala.

Forges.

Buffalo Forge Co., Buffalo, N. Y.

Foundries. (Waterproof.)

Requarth Co., C. W., Charlotte, N. C.

Foundry Equipment and Supplies.

Newport Sand Bank Co., Inc., Newport, Ky.
Paxson Co., J. W., Philadelphia, Pa.

Foundry Facings. (Talc and Soapstone.)

Georgia Talc Co., Asheville, N. C.

Foundry and Machine Shops.

Earle Gear & Machine Co., Philadelphia, Pa.
Glamorgan Pipe & Foundry Co., Lynchburg, Va.
Golden Foundry & Machine Wks., Columbus, Ga.
Lombard Iron Works, Augusta, Ga.
Pavle Eng. & Mach. Co., Baltimore, Md.
Titus, E. E., Petersburg, Va.
Vaik & Murdoch Iron Works, Charleston, S. C.

Frogs. [See Railroad Frogs and Switches.]**Fuel Economizer.**

Green Fuel Economizer Co., Matteawan, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Fuel Oil.

Gulf Refining Co., Pittsburgh, Pa.
U. S. Asphalt Refining Co., New York, N. Y.

Furnaces. (For Industrial Purposes.)

Smythe Co., The S. R., Pittsburgh, Pa.

Fuses. (Electrical.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuse Shells. (Renewable.)

Economy Fuse & Mfg. Co., Chicago, Ill.

Fuses, Bases and Fittings.

Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.

American Sheet & Tin Plate Co., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
McCalla, Inc., Harold, Philadelphia, Pa.
Portsmouth Steel Co., Portsmouth, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.

Garage and House. (Portable.)

Dixie Culvert & Metal Co., Atlanta, Ga.

Gas Blowers. (Turbine.)

Terry Steam Turbine Co., Hartford, Conn.

Gas Engines. [See Engines, Gas.]**Gas Machines.**

Kemp Mfg. Co., C. M., Baltimore, Md.
Milburn Co., Alex. N., Baltimore, Md.

Gas Plants.

Power & Mining Machinery Co., Cudahy, Wis.
Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.

Ohio Gas Engine Works, Philadelphia, Pa.
Smythe Co., The S. R., Pittsburgh, Pa.
Westinghouse Machine Co., Pittsburgh, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.

Gulf Refining Co., Pittsburgh, Pa.

Gas and Steam Fitters' Tools.

Saunders' Sons, D., Yonkers, N. Y.

Gears.

American Die & Tool Co., Reading, Pa.
Caldwell & Sons Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Earle Gear & Machine Co., The, Philadelphia, Pa.
Edgemont Machine Co., Dayton, O.
James Mfg. Co., D. O., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Poole Engineering & Machine Co., Baltimore, Md.

Generators. (Hot Water.)

Griscom-Russell Co., New York, N. Y.

Generating Sets.

Engberg Electric & Mechanical Works, St. Joseph, Mo.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
Triumph Electric Co., Cincinnati, O.

Geologists.

Davis, Geo. C., Phila., Pa.
Froehling & Robertson, Richmond, Va.
Grimley, G. P., Martinsburg, W. Va.
Maynard-Carter, Chattanooga, Tenn.

Glass. (Plate, etc.)

Binswanger & Co., Memphis, Tenn.

Governors. (Steam Engine.)

Pickering Governor Co., Portland, Conn.

Grain Elevator Supplies.

Caldwell & Sons Co., H. W., Chicago, Ill.
Jeffrey Mfg. Co., Columbus, O.
Link-Belt Co., Nicetown (Philadelphia), Pa.

Granite.

Southern Marble & Granite Co., Spartanburg, S. C.

Graphite.

Dixon Crucible Co., Joseph, Jersey City, N. J.

Grates and Grate Bars.

Huber Grate Bar & Stoking Co., Baltimore, Md.
Thomas Grate Bar Co., Birmingham, Ala.

Gravel.

Arundel Sand & Gravel Co., Baltimore, Md.
Gravel. (Roofing and Road)
American Ballast Co., Knoxville, Tenn.

Gravity Spiral Chutes.

Mathews Gravity Carrier Co., Ellwood City, Pa.

Grease.

Albany Lubricating Co., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.

Greases and Lubricating Compounds.

Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Robinson & Son Co., Wm. O., Baltimore, Md.

Grinders. (Gypsum, Limestone, etc.)

Stedman's Foundry & Machine Wks., Aurora, Ind.

Grinding Wheels.

Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.

Groovers.

Huther Bros. Saw Mfg. Co., Inc., Rochester, N. Y.

Gunpowder.

Atlas Powder Co., Wilmington, Del.
Du Pont de Nemours Powder Co., E. I., Wilmington, Del.

Hammers. (Steam, Power, Pneumatic.)

Independent Pneumatic Tool Co., Chicago, Ill.

Handle Machinery. [See Woodworking Machinery.]**Hangers. [See Pulleys, Shafting and Hangers.]****Hay Tools.**

Myers & Bro., F. E., Ashland, .

Heater. (Asphalt.)

Cummer & Son Co., F. D., The, Cleveland, Ohio.

Heating Apparatus, Engineers and Contractors.

American Blower Co., Detroit, Mich.
Buffalo Steam Pump Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Hoisting Machinery.

American Hoist & Derrick Co., St. Paul, Minn.
Austin Machinery Co., W. E., Atlanta, Ga.
Byers Machine Co., The John F., Ravenna, Ohio.
Dake Engine Co., Grand Haven, Mich.
Flory Mfg. Co., S. Bangor, Pa.
Link-Belt Co., Nicetown (Philadelphia), Pa.
Lidgerwood Mfg. Co., New York, N. Y.
Monahan Machine Co., Chicago, Ill.
Stroudsburg Engine Works, Stroudsburg, Pa.

Hoists.

Speldel, J. G., Reading, Pa.

HOISTING.

American Hoist & Derrick Co., St. Paul, Minn

- Industrial Track Work.** [See Railways, Ind.]
- Injectors.**
Jenks Bros., New York, N. Y.
Lunkenheimer Co., The, Cincinnati, O.
Sellers & Co., Inc., Wm., Philadelphia, Pa.
- Insulated Wires and Cables.**
American Steel & Wire Co., Chicago, Ill.
Safety Insulated Wire & Cable Co., New York, N. Y.
- Insulating Materials.**
Continental Fibre Co., Newark, Del.
General Electric Co., Schenectady, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
- Insulating. (Tape.)**
Standard Paint Co., New York, N. Y.
- Insulating. (Varnishes and Compounds.)**
Standard Paint Co., New York, N. Y.
- Iron.**
La Belle Iron Works, Steubenville, O.
Lakeland Valley Iron & Steel Co., Lebanon, Pa.
Milton Mfg. Co., Milton, Pa.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
Union Drawn Steel Co., Beaver Falls, Pa.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Irrigation Machinery.**
Cameron Steam Pump Wks., A. S. New York, N. Y.
- Investment Securities.**
Breed, Elliott & Harrison, Cincinnati, O.
Provident Savings Bank & Trust Co., Cincinnati, Ohio.
- Jobbers. (Electrical.)**
Carroll Electrical Co., Washington, D. C.
- Kettles. (Steam Jacket.)**
Badger & Sons Co., E. R., Boston, Mass.
- Key Seater. (Portable.)**
Burr & Son, John T., Brooklyn, N. Y.
- Knitting Machinery.**
Acme Knitting Mch. & Needle Co., Franklin, N. H.
- Lamps. (Arc and Incandescent.)**
General Electric Co., Schenectady, N. Y.
Koerting & Mathieson Co., New York, N. Y.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Westinghouse Lamp Co., New York, N. Y.
- Lamps. (Carbon and Tungsten.)**
Newman Electric Lamp Co., Cincinnati, O.
- Lamp Posts. (Electric, Gas.)**
Union Foundry Co., Anniston, Ala.
Western Gas Construction Co., Ft. Wayne, Ind.
Witners Fdry. & Mach. Works, Atlanta, Ga.
- Lamp Standards. (Ornamental Iron.)**
Union Foundry Co., Anniston, Ala.
Witners Foundry & Machine Works, Atlanta, Ga.
- Lands. (Mineral, Timber, Farm, etc.)** [See Industrial, Agricultural and Commercial Opportunities.]
- Landscape Architects** [See Engineers.] [Landscape]
- Lath. (Expanded Metal.)**
Aronson Co., L. Columbia, S. C.
Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.
Milwaukee Corrugating Co., Milwaukee, Wis.
- Lathes. (Engine.)**
Greaves, Klusman Tool Co., The, Cincinnati, O.
- Lawn Furniture. (Wire.)**
Bolles Iron & Wire Works, J. E., Detroit, Mich.
Dufur & Co., Baltimore, Md.
Dufur, Baggott & Co., Baltimore, Md.
- Leadite.**
Leadite Co., Inc., The, Philadelphia, Pa.
- Light Plants.**
Carlisle & Finch Co., The, Cincinnati, Ohio.
- Lights. (Portable Acetylene.)**
Milburn Co., Alex. N., Baltimore, Md.
- Lime. (Hydrated.)**
Kentucky Portland Cement & Coal Co., Louisville, Ky.
Security Cement & Lime Co., Hagerstown, Md.
- Limestone Products.**
Kentucky Portland Cement & Coal Co., Louisville, Ky.
Security Cement & Lime Co., Hagerstown, Md.
- Liquor Filters.**
International Filter Co., Chicago, Ill.
- Lithographers, Engravers.**
Young & Seiden Co., Baltimore, Md.
- Lockers. (Metal.)**
Bernstein Mfg. Co., Phila., Pa.
Reighley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.
- Locomotives.**
INDUSTRIAL.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Wks., The, Philadelphia, Pa.
Climax Mfg. Co., Corry, Pa.
Gard, Geo. B., Cincinnati, O.
Davenport Locomotive Works, Davenport, Ia.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
Southern Iron & Equipment Co., Atlanta, Ga.
RAILWAY.
American Locomotive Co., New York, N. Y.
Baldwin Locomotive Wks., The, Philadelphia, Pa.
Lima Locomotive Corporation, Lima, O.
Porter Co., H. K., Pittsburgh, Pa.
- Log Dumping Device.**
Chase Turbine Mfg. Co., Orange, Mass.
- Looms and Weaving Machinery.**
Draper Co., Hopedale, Mass.
Nason Machine Works, Taunton, Mass.
Saco-Lowell Shops, Boston, Mass.
- Loom Harness.**
American Supply Co., Providence, R. I.
- Lubricants.**
Albany Lubricating Co., New York, N. Y.
Oils Elevator Co., New York, N. Y.
Lubricants. (Graphite.)
Dixon Crucible Co., Joseph, Jersey City, N. J.
- Lumber.**
Industrial Lumber Co., Elizabeth, La.
Lumber. (Crescote.)
American Crescote Works, New Orleans, La.
Lumber. (Heavy Construction, Pitch Pine, etc.)
Industrial Lumber Co., Elizabeth, La.
National Lumber & Crescote Co., Texarkana, Ark.
- Lumber Buggies.**
Socle Steam Feed Works, Meridian, Miss.
- Lumber Stackers.**
Socle Steam Feed Works, Meridian, Miss.
- Machinery. (Special.)**
Bliss Co., E. W., Brooklyn, N. Y.
Kline, Lewis T., Alpena, Mich.
Universal Machine Co., Baltimore, Md.
- Machinery and Supplies. (New and Second-Hand Bargains.)**
Assets Purchasing Co., Wheeling, W. Va.
Casey Machinery Co., D. L., Springfield, O.
Champion Fibre Co., Canton, N. C.
Cleveland Belting & Machinery Co., Cleveland, O.
Consolidated Iron & Metal Co., Chattanooga, Tenn.
Contractors Mch. & Supply Co., Pittsburgh, Pa.
Contractors' Service Co., New York, N. Y.
Duzels & Son, New York, N. Y.
Harris Bros. Co., Chicago, Ill.
Hitner's Sons Co., Henry A., Philadelphia, Pa.
Hyde Bros. Steel & Rail Co., Pittsburgh, Pa.
Lohman, Charles T., Birmingham, Ala.
Lodge & Shipley Mach. Tool Co., Cincinnati, O.
Marine Metal & Supply Co., New York, N. Y.
Nussbaum & Co., V. M., Fort Wayne, Ind.
Pannuel Engineering Co., Chicago, Ill.
Pipe & Contractors' Supply Co., New York, N. Y.
Power Equipment Co., New York, N. Y.
Prentiss Tool & Supply Co., New York, N. Y.
Randle Machinery Co., Cincinnati, O.
Reed Co., Howard W., Philadelphia, Pa.
Sacco-Maiter & Co., George, Philadelphia, Pa.
Samuel, Frank, Philadelphia, Pa.
Seyfert's Sons, Inc., L. F., Philadelphia, Pa.
South Side Fdry. & Mch. Co., Charleston, W. Va.
Southern Mch. & Equipment Co., Lynchburg, Va.
Sterling Machinery Co., New York, N. Y.
Tampa Machinery Exchange, Tampa, Fla.
Texas Supply Co., Beaumont, Tex.
Thomasville Iron Works, Thomasville, Ga.
Toomey, Frank, Inc., Philadelphia, Pa.
Wayne Machinery Co., Fort Wayne, Ind.
Wilson Machy. Co., Harold, E., St. Louis, Mo.
Winterer Co., Herman L., Philadelphia, Pa.
- Machine Tools.**
Greaves, Klusman Tool Co., The, Cincinnati, O.
- Machinists. (Engineers.)**
Savannah Iron Works, Savannah, Ga.
Universal Machine Co., Baltimore, Md.
- Magnesia Materials.**
Johns-Manville Co., H. W., New York, N. Y.
- Magnetic Separators.**
Paxson Co., J. W., Philadelphia, Pa.
- Mail Chutes.**
Cutler Mail Chute Co., Rochester, N. Y.
- Mantels. (Tile.)**
Northern Mantel Co., W. J., Memphis, Tenn.
- Mantels. (Wooden.)**
Northern Mantel Co., W. J., Memphis, Tenn.
- Mechanical Draft.**
Buffalo Forge Co., Buffalo, N. Y.
Sturtevant Co., B. F., Hyde Park, Boston, Mass.
- Metal Ceilings.** [See Ceilings, Metal.]
- Metaline.**
Metaline Co., Long Island City, N. Y.
- Metal. (For Tanks, Culverts, Roofing, etc.)**
Portsmouth Steel Co., Portsmouth, O.
- Metal Corner Bead.**
Penn Metal Co., Boston, Mass.
- Metal Culverts.** [See Culverts.] [Corrugated Metal.]
- Metal Shingles.** [See Shingles.] [Metal.]
- Metal Stamping.**
Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
- Metal Window Frames and Sash.** [See Window Frames and Sash.] [Fireproof.]
- Metal Work.** [See Sheet Metal Work.]
- Metal-Working Machinery. (Sheet.)**
Bertch & Co., Cambridge City, Ind.
Bliss Co., E. W., Brooklyn, N. Y.
Price Machinery Co., S. M., Norfolk, Va.
- Meters. (Water.)**
Alberger Pump & Condenser Co., New York, N. Y.
- Meter Boxes, Couplings, Gauges. (Water.)**
Clark Co., H. W., Mattoon, Ill.
- Micrometers, Calipers, etc.**
Starrett Co., L. S., Athol, Mass.
- Milk Filters. (Liquor, Milk, etc.)**
International Filter Co., Chicago, Ill.
- Mill Engineers and Architects.**
O'Brian, W. G., Memphis, Tenn.
Srinne, J. E., Greenville, S. C.
- Mill Supplies.**
Bailey-Lobby Co., Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Gainesville Iron Works, Gainesville, Ga.
Lombard Iron Works, Augusta, Ga.
Lunkenheimer Co., The, Cincinnati, O.
Mecklenburg Iron Works, Charlotte, N. C.
Nordyke & Harmon Co., Indianapolis, Ind.
Saloni Foundry Machine Wks., Salem, Va.
Starr Co., H. F., Baltimore, Md.
Wolf Co., Chambersburg, Pa.
- Mining Machinery. (Gold, Copper, Plate, etc.)**
Bartlett & Snow Co., C. O., Cleveland, O.
Jeffrey Mfg. Co., Columbus, O.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Mecklenburg Iron Works, Charlotte, N. C.
Raymond Bros. Impact Pulv. Co., Chicago, Ill.
- Mixers. (Concrete.)**
Atlas Engineering Co., Milwaukee, Wis.
Austin Machinery Co., W. E., Atlanta, Ga.
Blystone Mfg. Co., Cambridge Springs, Pa.
Standard Scale & Supply Co., Pittsburgh, Pa.
Van Duzen, Royce Co., Columbus, O.
- Mixing Machinery.**
Dunning, W. D., Syracuse, N. Y.
Lynn-Superior Co., The, Cincinnati, O.
- Mortar Colors.**
Chattanooga Paint Co., Chattanooga, Tenn.
- Motor Trucks. (Electric.)**
General Vehicle Co., Long Island City, N. Y.
- Motor Trucks. (Gasoline.)**
White Co., The, Cleveland, O.
- Motor Trucks. (Second Hand.)**
Mar-Dei Mobile Co., Baltimore, Md.
- Music Wire.**
Waterbury Co., The, New York, N. Y.
- Nails. (Cut.)**
La Belle Iron Works, Steubenville, O.
- Nails and Spikes.**
La Belle Iron Works, Steubenville, Ohio.
Lebanon Valley Iron & Steel Co., Lebanon, Pa.
Republic Iron & Steel Co., Youngstown, O.
Youngstown Sheet & Tube Co., Youngstown, O.
- Nuts. [See Bolts, Nuts, Rivets, etc.]**
- Oil. (Crescote.)**
Barrett Mfg. Co., Philadelphia, Pa.
- Oils. (Lubricating, Etc.)**
Albany Lubricating Co., New York, N. Y.
Galena Signal Oil Co., Franklin, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Robinson & Son Co., Wm. C., Baltimore, Md.
- Oil Cans.**
Wall Mfg. Supply Co., F., Allegheny, Pa.
- Oil Engines. [See Engines (Oil).]**
- Oil Separators.**
Stewart Heater Co., Buffalo, N. Y.
- Oil Well Machinery.**
Keystone Steam Well Mach. Co., Beaver Falls, Pa.
Williams Bros., Ithaca, N. Y.
- Oil Well Tubing and Casing.**
Hyers Co., A. M., Pittsburgh, Pa.
- Ore Handling Machinery. [See Coal Handling Machinery.]**
- Ornamental Iron Works.**
Bolles Iron & Wire Wks., J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Cincinnati Mfg. Co., Cincinnati, O.
Dow Wire & Iron Works, Louisville, Ky.
Ohio Elevator & Mach. Co., The, Columbus, O.
Schrieber & Sons Co., The L., Cincinnati, O.
Snead Architectural Iron Works, Louisville, Ky.
- Ovens. (Core Baking, Lacquering, etc.)**
Oven Equipment & Mfg. Co., The, New Haven, Conn.
- Oxygen.**
International Oxygen Co., New York, N. Y.
- Oxygen Generators.**
International Oxygen Co., New York, N. Y.
- Oxy-Acetylene Welding and Cutting Outfit and Supplies.**
International Oxygen Co., New York, N. Y.
Milburn Co., Alex. N., Baltimore, Md.
- Packing. (Asbestos, Metallic, Rubber, Leather, etc.)**
Goodyear Tire & Rubber Co., Akron, Ohio.
Jenkins Bros., New York, N. Y.
Johns-Manville Co., H. W., New York, N. Y.
Power Specialty Co., New York, N. Y.
United Lead Co., New York, N. Y.
- Packing. (Lead Wool.)**
United Lead Co., New York, N. Y.
- Paint. (Cement Floors, Masonry, Stucco, etc.)**
Standard Paint Co., New York, N. Y.
- Paint. (Metal Surfaces.)**
Dixon Crucible Co., Joseph, Jersey City, N. J.
Standard Paint Co., The, New York, N. Y.
- Paint. (Roofing, Building, etc.)**
Cameron & Barkley Co., Charleston, S. C.
Chattanooga Paint Co., Chattanooga, Tenn.
Standard Paint Co., New York, N. Y.
- Paint-Making Machinery.**
Lynn-Superior Co., The, Cincinnati, O.
- Paper. (Roofing, Building, Sheeting, etc.)**
Barrett Mfg. Co., Philadelphia, Pa.
Cameron & Barkley Co., Charleston, S. C.
- Patents and Inventions.**
Russell Machine Co., F. K., Dallas, Tex.
- Patent Attorneys.**
Brown, Eugene C., Washington, D. C.
Chandee & Chandee, Washington, D. C.
Coleman, Watson E., Washington, D. C.
Duffie & Co., John S., Washington, D. C.
Evans & Co., Victor J., Washington, D. C.
Fitzgerald & Co., W. T., Washington, D. C.
Hill, H. S., Washington, D. C.
Hodges, Vernon E., Washington, D. C.
Jenner, Herbert, Washington, D. C.
Lacey, R. S. & A. B., Washington, D. C.
- Pavement Filler.**
Barrett Mfg. Co., Philadelphia, Pa.
- Paving Contractors.**
Dolarway Paving Co., New York, N. Y.
West Construction Co., The, Chattanooga, Tenn.
- Paving Blocks. (Crescote.)**
International Crescoting & Construction Co., Galveston, Tex.
- Paving Blocks. (Concrete.)**
National Lumber & Crescoting Co., Texarkana, Ark.
Republic Crescoting Co., Indianapolis, Ind.
Southern Crescoting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
U. S. Wood Preserving Co., New York, N. Y.
Wyckoff Pipe & Crescoting Co., Inc., The, New York, N. Y.
- Paving Blocks. (Granite.)**
Southern Marble & Granite Co., The, Spartanburg, S. C.
- Paving Brick.**
Carlisle Paving Brick Co., Portsmouth, O.
Copeland-Ingles Shale Brick Co., Birm'gh'm, Ala.
Dunn Wire-Cut-Log Brick Co., Connest, Ohio
Southern Clay Mfg. Co., Chattanooga, Tenn.
Standard Brick Co., Macon, Ga.
- Paving Systems. (Concrete.)**
Dolarway Paving Co., New York, N. Y.
- Perforated Metal.**
Caldwell & Son, H. W., Chicago, Ill.
Erdie Perforating Co., Rochester, N. Y.
Hendricks Mfg. Co., The, Carbondale, Pa.
Manhattan Perforated Metal Co., New York, N. Y.
Mundt & Sons, Charles, Jersey City, N. J.
- Petroleum Refiners.**
Gulf Refining Co., Pittsburgh, Pa.
Standard Oil Co., Inc., Newark, N. J.
- Phosphate Machinery.**
Alsing Engineering Co., J. R., New York, N. Y.
American Process Co., New York, N. Y.
Bailey-Lobby Co., The, Charleston, S. C.
Cameron & Barkley Co., Charleston, S. C.
Link-Belt Co., Nictown (Philadelphia), Pa.
McLannan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Impact Pulv. Co., Chicago, Ill.
Valk & Murdoch Iron Works, Charleston, S. C.
- Photo Engravers.**
Baltimore-Md. Engraving Co., Baltimore, Md.
- Pig Iron.**
La Belle Iron Works, Steubenville, O.
Republic Iron & Steel Co., Youngstown, O.
Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.
- Pile Drivers.**
Vulcan Iron Works, Chicago, Ill.
- Piling. (Crescote.)**
American Crescote Works, New Orleans, La.
Intern'l Crescoting & Const. Co., Galveston, Tex.
Southern Crescoting Co., Ltd., Slidell, La.
- Pillow Blocks.**
Golden's Foundry & Machine Co., Columbus, Ga.
- Pipe. (Cast Iron.)**
American Cast Iron Pipe Co., Birmingham, Ala.
American Pipe & Construction Co., Phila., Pa.
Clow & Sons, James H., Chicago, Ill.
Donaldson Iron Co., Etnaus, Pa.
Giamorgan Pipe & Foundry Co., Lynchburg, Va.
Greenap's Sons Iron & Steel Co., Jos., St. Louis, Mo.
Lynchburg Foundry Co., Lynchburg, Va.
Mason Iron & Steel Co., Mession, O.
Standard Cast Iron Pipe & Fdry. Co., Bristol, Pa.
U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
Warren Fdry. & Mach. Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
- Pipe. (Coil.)**
Columbus Iron Works, Columbus, Ga.
Frick Co., The, Waynesboro, Pa.
National Pipe Bending Co., New Haven, Conn.
York Mfg. Co., York, Pa.
- Pipe. (Corrugated Culvert.)** [See Culvert (Corrugated Metal).]
- Pipe (Lead)**
United Lead Co., New York, N. Y.
- Pipe. (Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
Keeler Co., E., Williamsport, Pa.
- Pipe. (Second Hand.)**
Eagle Pipe Supply Co., New York, N. Y.
Marine Metal & Supply Co., New York, N. Y.
Pipe & Contractors' Supply Co., New York, N. Y.
- Pipe. (Spiral Riveted.)**
Abendroth & Root Mfg. Co., Newburgh, N. Y.
American Spiral Pipe Works, Chicago, Ill.
- Pipe. (Spiral Steel.)**
Standard Spiral Pipe Works, Chicago, Ill.
- Pipe. (Sewer, Vitrified.)** [See Sewer Pipe, Vitrified.]
- Pipe. (Wood.)**
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe. (Wrought.)**
Hyers Co., A. M., Pittsburgh, Pa.
La Belle Iron Works, Steubenville, O.
National Tube Co., Pittsburgh, Pa.
Youngstown Sheet & Tube Co., Youngstown, O.
- Pipe Bends.**
Columbus Iron Works Co., Columbus, Ga.
Pittsburgh Valve, Fdry. & Const. Co., Pittsburgh, Pa.
- Pipe Covering. (Steam.)**
Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.
Johns-Manville Co., H. W., New York, N. Y.
Southern Asbestos Mfg. Co., Inc., Richmond, Va.
Wyckoff & Son Co., A., Elmira, N. Y.
- Pipe Cutting and Threading Machinery.**
Oster Mfg. Co., The, Cleveland, Ohio.
Saunders' Sons, D., Yonkers, N. Y.
- Pipe Fittings.**
American Cast Iron Pipe Co., Birmingham, Ala.
Columbus Iron Works, Columbus, Ga.
Lunkenheimer Co., The, Cincinnati, O.
Pittsburgh Valve, Fdry. and Const. Co., Pittsburgh, Pa.
Warren Fdry. & Mach. Co., New York, N. Y.
York Mfg. Co., York, Pa.
- Pipe Jointing. (Gas and Water Main.)**
Leadite Co., Inc., The, Philadelphia, Pa.
United Lead Co., New York, N. Y.
- Pipe Unions and Joints.**
Dart Mfg. Co., E. M., Providence, R. I.
National Tube Co., Pittsburgh, Pa.
- Pipe Wrenches and Cutters.**
Saunders' Sons, D., Yonkers, N. Y.
- Piping System. (Designed and Installed.)**
Pittsburgh Valve, Foundry & Construction Co., Pittsburgh, Pa.
- Pitch.**
Barrett Mfg. Co., Philadelphia, Pa.
- Plaster.**
Security Cement & Lime Co., Hagerstown, Md.
- Plaster Machinery.**
Bartlett & Snow Co., C. O., Cleveland, O.
- Plates.**
Cincinnati Iron & Steel Co., Cincinnati, O.
Wood Iron & Steel Co., Alan, Philadelphia, Pa.
- Plows. (Road.)**
Syracuse Chilled Plow Co., Syracuse, N. Y.
- Pneumatic Tools. [See Tools—Pneumatic.]**
- Poles. (Crescote.)**
American Crescote Works, New Orleans, La.
Intern'l Crescoting & Const. Co., Galveston, Tex.
National Lumber & Crescote Co., Texarkana, Ark.
Southern Crescoting Co., Ltd., Slidell, La.
Southern Wood Preserving Co., Atlanta, Ga.
- Polishing Machinery. (Wheels and Blocks.)**
Carborundum Co., Niagara Falls, N. Y.
Vitrified Wheel Co., Westfield, Mass.
- Power Plants. (Steam and Electric.)**
Assets Purchasing Co., Wheeling, W. Va.
Gibbs Machinery Co., Inc., Columbus, S. C.
Modern Equipment Co., Savannah, Ga.
Price Machinery Co., S. M., Norfolk, Va.
Washburn Co., A. H., Charlotte, N. C.
- Power Transmission Machinery.**
Bailey-Lobby Co., Charleston, S. C.
Caldwell & Son Co., H. W., Chicago, Ill.
Crescon-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Machine Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Nordyke & Harmon Co., Indianapolis, Ind.
Ore Engineering & Machine Co., Baltimore, Md.
Price Machinery Co., S. M., Norfolk, Va.
Schofield Iron Works, Macon, Ga.
Smith-Courtney Co., Richmond, Va.
Wolf Co., The, Chambersburg, Pa.
Wood's Sons, T. B., Chambersburg, Pa.
- Presses. (Rolling, Cottonseed Oil, etc. Hydraulic and Power.)**
Boomer & Boschert Press Co., Syracuse, N. Y.
Cardwell Machine Co., Richmond, Va.
Continental Gie Co., Birmingham, Ala.
French Oil Mill Mchry. Co., The, Fiqua, O.
Murray Co., The, Atlanta, Ga.
Saco-Lowell Shops, Boston, Mass.
- Presses. (Stamping.)**
Bliss Co., E. W., Brooklyn, N. Y.
- Printers. (Book, Catalog, Job, etc.)**
Fleet-McGinley Co., Baltimore, Md.
- Promoters.**
Electric Bond & Share Co., New York, N. Y.

Pulleys. (Friction Clutch.)

Caldwell & Son Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Edgemont Machine Co., Dayton, O.
Medart Patent Pulley Co., St. Louis, Mo.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulleys. (Steel Rim.)

Medart Patent Pulley Co., St. Louis, Mo.

Pulleys. (Wood Split.)

Caldwell & Son Co., H. W., Chicago, Ill.
Lane Mfg. Co., Montpelier, Vt.
Medart Patent Pulley Co., St. Louis, Mo.
Reeves Pulley Co., Columbus, Ind.
Saginaw Mfg. Co., Saginaw, Mich.
Salem Foundry & Machine Wks., Salem, Va.

Pulleys, Shafting and Hangers.

Caldwell & Son Co., H. W., Chicago, Ill.
Cresson-Morris Co., Philadelphia, Pa.
Dodge Manufacturing Co., Mishawaka, Ind.
Golden's Foundry & Mach. Co., Columbus, Ga.
Jeffrey Mfg. Co., Columbus, O.
Jones & Laughlin Steel Co., Pittsburgh, Pa.
Lane Mfg. Co., Montpelier, Vt.
Link-Belt Co., Nictown (Philadelphia), Pa.
Medart Patent Pulley Co., St. Louis, Mo.
Nordyke & Marrison Co., Indianapolis, Ind.
Poole Engineering & Mach. Co., Baltimore, Md.
Wood's Sons Co., T. B., Chambersburg, Pa.

Pulverizers.

Alsing Engineering Co., J. R., New York, N. Y.
Austin Mfg. Co., Chicago, Ill.
Gruender Pat. Crusher & Pulv. Co., St. Louis, Missouri.
Jeffrey Mfg. Co., Columbus, O.
McLanahan-Stone Mach. Co., Hollidaysburg, Pa.
Raymond Bros., Impact Pulv. Co., Chicago, Ill.
Stedman's Foundry & Machine Wks., Aurora, Ind.
Western Wheeled Scraper Co., Aurora, Ill.

Pumping Machinery.

Affiliated Manufacturers Co., Milwaukee, Wis.
Alberger Pump & Condenser Co., New York, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Moffatt Machinery Mfg. Co., Charlotte, N. C.
Morris Machine Works, Baldwinville, N. Y.
Myers & Bros., F. E., Ashland, O.
Norborn Engineering Co., Philadelphia, Pa.
Reilly Mfg. Co., J. J., Louisville, Ky.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Air.)

Blakelee Mfg. Co., Du Quoin, Ill.

Pumps. (Boiler Feed.)

Alberger Pump & Condenser Co., New York, N. Y.
Blakelee Mfg. Co., Du Quoin, Ill.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Jeanville Iron Works Co., Hazleton, Pa.
Leak-Belt Co., Nictown (Philadelphia), Pa.
Murray Iron Works Co., Burlington, Ia.
Myers & Bros., F. E., Ashland, O.
Reilly Mfg. Co., J. J., Louisville, Ky.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Centrifugal.)

Alberger Pump & Condenser Co., New York, N. Y.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
De Laval Steam Turbine Co., Trenton, N. J.
Erie Pump & Engine Works, Erie, Pa.
Jeanville Iron Works Co., Hazleton, Pa.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Pacific Flushing Tank Co., New York, N. Y.
Wood & Co., R. D., Philadelphia, Pa.
Worthington, Henry R., Harrison, N. J.

Pumps. (Deep Well.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Goulds Mfg. Co., Seneca Falls, N. Y.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.

Pumps. (Dredging.)

Buffalo Steam Pump Works, Buffalo, N. Y.
Dean Bros. Steam Pump Works, Indianapolis, Ind.
Erie Pump & Engine Works, Erie, Pa.
Goulds Mfg. Co., Seneca Falls, N. Y.
Morris Machine Works, Baldwinville, N. Y.
Norborn Engineering Co., Philadelphia, Pa.
Wood & Co., R. D., Philadelphia, Pa.

Pumps. (Hydraulic.)

Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cardwell Machine Co., Richmond, Va.
Erie Pump & Engine Works, Erie, Pa.
French Oil Mill Mch. Co., The, Fiqua, O.

Pumps. (Oil and Gasoline.)

Keystone Boiler & Fdry. Co., Columbia, Pa.

Pumps. (Steam.)

Alberger Pump & Condenser Co., New York, N. Y.
Blake & Knowles Steam Pump Works, East Cambridge, Mass.
Blakelee Mfg. Co., Du Quoin, Ill.
Buffalo Steam Pump Co., Buffalo, N. Y.
Cameron Steam Pump Wks., A. S., New York, N. Y.
Cameron & Barkley Co., Charleston, S. C.
Clayton Air Compressor Works, Cambridge, Mass.
Cook Well Co., The, St. Louis, Mo.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Deane Steam Pump Co., Holyoke, Mass.
Fairbanks-Morse & Co., Atlanta, Ga.
Keystone Pump & Well Engine Co., Beaver Falls, Pa.
Murray Iron Works Co., Burlington, Ia.
Price Machinery Co., S. M., Norfolk, Va.
Snow Steam Pump Works, The, New York, N. Y.
Sydnor Pump & Well Co., Inc., Richmond, Va.
Union Steam Pump Co., Battle Creek, Mich.
Worthington, Henry R., Harrison, N. J.

Pumps. (Trench.)

Affiliated Manufacturers Co., Milwaukee, Wis.

Pumps. (Turbine Driven.)

Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Pumps. (Vacuum.)

Cameron Steam Pump Wks., A. S., New York, N. Y.
Dean Bros. Steam Pump Wks., Indianapolis, Ind.
Reilly Mfg. Co., J. J., Louisville, Ky.
Union Steam Pump Co., Battle Creek, Mich.

Pumps. (Water-works.)

Goulds Mfg. Co., Seneca Falls, N. Y.

Punches and Dies.

American Die & Tool Co., Reading, Pa.

Punching and Shearing Machinery.

Bertsch & Co., Cambridge City, Ind.

Rails.

Bliss Co., E. W., Brooklyn, N. Y.

Railroad Equipment and Supplies.

(New and Second-hand.)
American Frog & Switch Co., Hamilton, O.
American Locomotive Co., New York, N. Y.
Bailey-Lebby Co., The, Charleston, S. C.
Birmingham Rail & Loco. Co., Birmingham, Ala.

Cincinnati Frog & Switch Co., Cincinnati, O.
Curd, Geo. B., Cincinnati, O.

Fairbanks-Morse & Co., Atlanta, Ga.

Foster Co., L. B., Pittsburgh, Pa.

Georgia Car & Locomotive Co., Atlanta, Ga.

Grimshaw, Wm. B., Philadelphia, Pa.

Hoffman & Co., Inc., R. C., Baltimore, Md.

Hyde, Chas., Pittsburgh, Pa.

Kilby Frog & Switch Co., Birmingham, Ala.

Maclear, J. H., Suffolk, Va.

National Steel Rail Co., St. Louis, Mo.

Newhall Eng. Co., Geo. M., Philadelphia, Pa.

Read Co., Howard W., Philadelphia, Pa.

Robinson & Orr, Pittsburgh, Pa.

Sherwood, E. C., New York, N. Y.

Southern Iron & Equipment Co., Atlanta, Ga.

Steel Rail Supply Co., The, New York, N. Y.

Sterling Machinery Co., New York, N. Y.

United States Rail Co., Cumberland, Md.

Weir Frog Co., Cincinnati, O.

Wilson & Co., E. H., Philadelphia, Pa.

Wilson Mach. Co., Harold R., St. Louis, Mo.

Zelnicke Supply Co., Walter A., St. Louis, Mo.

Railroad Frogs & Switches.

American Frog & Switch Co., Hamilton, O.

Cincinnati Frog & Switch Co., Cincinnati, O.

Conley Frog & Switch Co., Memphis, Tenn.

Easton Car & Construction Co., Easton, Pa.

Kilby Frog & Switch Co., Birmingham, Ala.

Neall Engineering Co., Geo. M., Philadelphia, Pa.

Robinson & Orr, Pittsburgh, Pa.

Sweet's Steel Co., Williamsport, Pa.

Weir Frog Co., Cincinnati, O.

Rails. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.

Foster Co., L. B., Pittsburgh, Pa.

Franks, J. E., Atlanta, Ga.

Hoffman & Co., Inc., R. C., Baltimore, Md.

Hyde Bros. Steel Co., Pittsburgh, Pa.

Hyde, Chas., Pittsburgh, Pa.

Lackawanna Steel Co., Lackawanna, N. Y.

Levis & Co., Henry, Philadelphia, Pa.

Maclear, J. H., Suffolk, Va.

National Steel Rail Co., St. Louis, Mo.

Newhall Eng. Co., Geo. M., Philadelphia, Pa.

Republic Iron & Steel Co., Youngstown, O.

Robinson & Orr, Pittsburgh, Pa.

Sherwood, E. C., New York, N. Y.

Southern Iron & Equipment Co., Atlanta, Ga.

Steel Rail Supply Co., The, New York, N. Y.

Sweet's Steel Co., Williamsport, Pa.

Tennessee Coal, Iron & R. R. Co., B'm'gh'm, Ala.

United States Rail Co., Cumberland, Md.

Wilson & Co., E. H., Philadelphia, Pa.

Zelnicke Supply Co., Walter A., St. Louis, Mo.

Rail Bonds.

American Steel & Wire Co., Chicago, Ill.

Rail Braces, Crossings, etc. [See R. R. Frogs and Switches.]

Rail Grates and Grilles. (Brass.)

Newman Mfg. Co., Cincinnati, O.

Railways. (Industrial.)

Chase Fdry. & Mfg. Co., Columbus, O.

Cincinnati Frog & Switch Co., Cincinnati, O.

Easton Car & Construction Co., Easton, Pa.

Hunt Co., Inc., C. W., West New Brighton, N. Y.

Link-Belt Co., Nictown (Philadelphia), Pa.

Rams. (Hydraulic.) [See Hydraulic Ram.]**Reamers.**

American Die & Tool Co., Reading, Pa.

Morse Twist Drill & Mch. Co., New Bedford, Mass.

Reeds.

American Supply Co., Providence, R. I.

Refrigerating Machinery and Apparatus.

Huettner & Cramer Co., The, Detroit, Mich.

Remington Machine Co., Wilmington, Del.

Viller Mfg. Co., Milwaukee, Wis.

Vogt Machine Co., Henry, Louisville, Ky.

York Mfg. Co., York, Pa.

Reinforcing Bars. [See Concrete Reinforcing Bars.]**Riveters. (Pneumatic.)**

Independent Pneumatic Tool Co., Chicago, Ill.

Road Machinery.

Austin Bros., Atlanta, Ga.

Austin-Western Road Mch. Co., The, Chicago, Ill.

Buffalo Steam Roller Co., Buffalo, N. Y.

Contractors Mch. & Supply Co., Pittsburgh, Pa.

Erie Machine Shops, Erie, Pa.

Parahar Co., Ltd., A. B., York, Pa.

Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.

Holt Manufacturing Co., The, Peoria, Ill.

Huber Mfg. Co., The, Marion, Ohio.

Kelly Springfield Road Roller Co., Springfield, O.

Russell Grader Mfg. Co., Minneapolis, Minn.

Syracuse Chilled Plow Co., Syracuse, N. Y.

Universal Road Mch. Co., Kingston, N. Y.

Western Wheeled Scraper Co., Aurora, Ill.

Wheeling Mold & Fdry. Co., Wheeling, W. Va.

Roadmaking Materials.

Austin Bros., Atlanta, Ga.

Barber Asphalt Paving Co., Philadelphia, Pa.

Barrett Mfg. Co., Philadelphia, Pa.

Standard Oil Co., Inc., Newark, N. J.

U. S. Asphalt Refining Co., New York, N. Y.

Road Binders.

Barber Asphalt Paving Co., Phila., Pa.

Barrett Mfg. Co., Phila., Pa.

Standard Oil Co., Newark, N. J.

U. S. Asphalt Refining Co., New York, N. Y.

Road Roller. (Steam.)

Austin-Western Road Mch. Co., The, Chicago, Ill.

Barber Asphalt Paving Co., The, Buffalo, N. Y.

Buffalo Steam Roller Co., Buffalo, N. Y.

Erie Machine Shops, Erie, Pa.

Huber Mfg. Co., The, Marion, Ohio.

Kelly Springfield Road Roller Co., Springfield, O.

Universal Road Mch. Co., Kingston, N. Y.

Road Oil.

Gulf Refining Co., Pittsburgh, Pa.

Standard Oil Co., Inc., Newark, N. J.

U. S. Asphalt Refining Co., New York, N. Y.

Road Preservatives.

Barrett Mfg. Co., Philadelphia, Pa.

Fuiley, Sam. E., Atlanta, Ga.

Gulf Refining Co., Pittsburgh, Pa.

Standard Oil Co., Inc., Newark, N. J.

U. S. Asphalt Refining Co., New York, N. Y.

Road Scarifiers.

Buffalo Steam Roller Co., Buffalo, N. Y.

Gallon Iron Works & Mfg. Co., The, Gallon, Ohio.

Huber Mfg. Co., The, Marion, Ohio.

Rock Crushers. [See Crushers, Rock.]

Rolls. (Bending and Straightening.)

Bertsch & Co., Cambridge City, Ind.

Roller Covering Supplies.

American Supply Co., Providence, R. I.

Roofing Caps.

Robertson Steel & Iron Co., W. F., Cincinnati, O.

Roofing. (Ready Prepared: Felt, Tar, Asbestos, Asphalt.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.

Asbestos Protected Metal Co., Beaver Falls, Pa.

Asphalt Ready Roofing Co., New York, N. Y.

Barber Asphalt Paving Co., Philadelphia, Pa.

Barrett Mfg. Co., Philadelphia, Pa.

Cameron & Barkley Co., Charleston, S. C.

Chesapeake Roofing & Pipe Covering Co., Baltimore, Md.

Johns-Manville Co., H. W., New York, N. Y.

Standard Paint Co., The, New York, N. Y.

Roofing. (Metal Shingles.) [See Shingles, Metal.]

Cortright Metal Roofing Co., Philadelphia, Pa.

Edwards Mfg. Co., The, Cincinnati, O.

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.

Milwaukee Corrugating Co., Milwaukee, Wis.

Roofing. (Slate.)

East Bangor Consol. Slate Co., East Bangor, Pa.

Genuine Bangor Slate Co., Easton, Pa.

Johnson, E. J., New York, N. Y.

Roofing and Siding. (Metal.)

American Sheet & Tin Plate Co., Pittsburgh, Pa.

Asbestos Protected Metal Co., Beaver Falls, Pa.

Cameron & Barkley Co., Charleston, S. C.

Cortright Metal Roofing Co., Philadelphia, Pa.

Edwards Mfg. Co., The, Cincinnati, O.

Hyndman Roofing Co., Cincinnati, O.

Milwaukee Artistic Metal Ceiling Co., Milwaukee, Wis.

Milwaukee Corrugating Co., Milwaukee, Wis.

New Orleans Roofing & Metal Wks., New Orleans, La.

Portsmouth Steel Co., Portsmouth, O.

Southern Sheet & Tin Plate Co., Ashland, Ky.

Tennessee Metal Culvert Co., Nashville, Tenn.

Youngstown Sheet & Tube Co., Youngstown, O.

Rope. (Manila, Sisal, Hemp, etc.)

American Mfg. Co., Brooklyn, N. Y.

Broderick & Bascom Rope Co., St. Louis, Mo.

Columbian Rope Co., Auburn, N. Y.

Intern'l Cotton Mills, New York, N. Y.

Plymouth Cordage Co., North Plymouth, Mass.

St. Louis Cordage Mills, St. Louis, Mo.

Waterbury Cord, New York, N. Y.

Wood's Sons Co., T. B., Chambersburg, Pa.

Rope. (Wire.)

American Steel & Wire Co., Chicago, Ill.

Broderick & Bascom Rope Co., St. Louis, Mo.

Hunt Co., Inc., C. W., West New Brighton, N. Y.

Waterbury Cord, New York,

Steamship Lines. (Trans Atlantic.)
 Conard Steamship Co., Ltd., New York, N. Y.

Steam Shovel Chains.
 Wetmore Chain & Iron Co., Lebanon, Pa.

Steam Shovels.
 American Clay Machinery Co., The Bucyrus, Ohio.
 Fairbanks Steam Shovel Co., Marion, O.
 Marion-Osgood Co., Marion, O.
 Marion Steam Shovel Co., Marion, O.
 Sherwood, E. C., New York, N. Y.

Steam Specialties.
 Stokenheimer Co., The Cincinnati, Ohio.
 Powell Co., Wm., Cincinnati, O.

Steam Traps.
 Jenkins Bros., New York, N. Y.

Steel.
 Carnegie Steel Co., Pittsburgh, Pa.
 Dietrich Bros., Baltimore, Md.
 Gulf States Steel Co., Birmingham, Ala.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 La Belle Iron Works, Steubenville, O.
 Lackawanna Steel Co., Lackawanna, N. Y.
 Lebanon Valley Iron & Steel Co., Lebanon, Pa.
 Portsmouth Steel Co., Portsmouth, Ohio.
 Republic Iron & Steel Co., Youngstown, O.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Union Driven Steel Co., Beaver Falls, Pa.
 Union Nut Co., The, Cleveland, O.
 Wood Iron & Steel Co., Alan, Philadelphia, Pa.
 Youngstown Sheet & Tube Co., The, Youngstown, O.

Steel (Tool).
 Bourne-Fuller Co., The, Cleveland, Ohio.
 McKenna Bros., Brass Co., Pittsburgh, Pa.
 Union Driven Steel Co., Beaver Falls, Pa.

Steel (Vanadium).
 Carnegie Steel Co., Pittsburgh, Pa.
 Union Driven Steel Co., Beaver Falls, Pa.

Steel Buildings. (Designers, Builders.)
 Amer. Bridge Co., of New York, N. Y.
 Belmont Iron Works, Philadelphia, Pa.
 Champion Bridge Co., Wilmington, O.
 Chesapeake Iron Works, Baltimore, Md.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Phoenix Iron Co., Philadelphia, Pa.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Richmond Structural Steel Co., Richmond, Va.
 Schreiber & Sons Co., The L., Cincinnati, O.
 Soud Architectural Iron Works, Louisville, Ky.
 Turner, C. A. P., Minneapolis, Minn.
 Virginia Bridge & Iron Co., Roanoke, Va.

Steel Castings.
 Gracilis Steel Castings Co., Lansdowne, Pa.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Riverside Steel Casting Co., Newark, N. J.

Steel Plate Work.
 Casey-Hedges Co., Chattanooga, Tenn.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Coatesville Boiler Works, Coatesville, Pa.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Memphis Steel Construction Co., Memphis, Tenn.
 Phoenix Iron Co., Philadelphia, Pa.
 Struthers-Weiss Co., Warren, Pa.

Steel Protector. (Concrete Curb, Steps, etc.)
 [See Curb Protector Steel.]

Steel Sheet Piling.
 Frank, J. E., Atlanta, Ga.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Lackawanna Steel Co., Lackawanna, N. Y.

Stencils.
 Baltimore Office Supply Co., Baltimore, Md.

Stills. (Turpentine.)
 McMillan Bros., Jacksonville, Fla.

Stirrups. (Building.)
 Chesapeake Iron Works, Baltimore, Md.

Stock Certificates, Bonds and Seals.
 Baltimore Office Supply Co., Baltimore, Md.

Stokers. (Hand.)
 Huber Grate Bar & Stoking Co., Baltimore, Md.

Stokers. (Mechanical.)
 Babcock & Wilcox Co., New York, N. Y.
 Westinghouse Machine Co., Pittsburgh, Pa.

Stone. (Building.)
 Bedford Steam Stone Works, Bedford, Ind.
 Kirkpatrick Sand & Cement Co., Birmingham, Ala.

Storage Batteries.
 Rec. Storage Battery Co., The, Philadelphia, Pa.
 Westinghouse Machine Co., Pittsburgh, Pa.

Storage Warehouses.
 Union Terminal Co., Jacksonville, Fla.

Structural Steel and Iron.
 Amer. Bridge Co., of New York, N. Y.
 Belmont Iron Works, Philadelphia, Pa.
 Bourne-Fuller Co., The, Cleveland, Ohio
 Carnegie Steel Co., Pittsburgh, Pa.
 Champion Bridge Co., Wilmington, O.
 Chesapeake Iron Works, Baltimore, Md.
 Chickasaw Iron Works, Memphis, Tenn.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Cincinnati Iron & Steel Co., Cincinnati, O.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Dietrich Bros., Baltimore, Md.
 East St. Louis Bridge Co., East St. Louis, Ill.
 Easton Car & Construction Co., Easton, Pa.
 Greenson's Sons Iron & Steel Co., Jos., St. Louis, Mo.

Stumps.
 Hoffman & Co., Inc., R. C., Baltimore, Md.
 Jones & Laughlin Steel Co., Pittsburgh, Pa.
 Lackawanna Steel Co., Lackawanna, N. Y.
 Oregon Bridge Co., Lebanon, Ohio.
 Memphis Steel Construction Co., Memphis, Tenn.
 Phoenix Iron Co., Philadelphia, Pa.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Republic Iron & Steel Co., Youngstown, O.
 Richmond Structural Steel Co., Richmond, Va.
 Soud Architectural Iron Works, Louisville, Ky.
 Southern Sheet & Tin Plate Co., Ashland, Ky.
 Savannah Steel Products Co., Savannah, Ga.
 Tennessee Coal, Iron & R. R. Co., Birmingham, Ala.
 Vincennes Bridge Co., Vincennes, Ind.
 Virginia Bridge & Iron Co., Roanoke, Va.
 Wabers Dry & Mach. Wks., Atlanta, Ga.

Stump Pullers.
 Zimmerman Steel Co., Lone Tree, Iowa.

Sulphur.
 Union Sulphur Co., New York, N. Y.

Super-Heaters. (Steam.)
 Babcock & Wilcox Co., New York, N. Y.
 Power Specialty Co., New York, N. Y.

Surveying Instruments.
 Weber & Co., F., Philadelphia, Pa.

Swinging Engines.
 Dake Engine Co., Grand Haven, Mich.

Switchboards, Switches, etc.
 Fort Wayne Electric Works, Fort Wayne, Ind.
 General Electric Co., Schenectady, N. Y.

Switches. [See Railroad Frogs and Switches.]

Switchstands.
 Weir Frog Co., Cincinnati, O.

Tackle Blocks. (For Wire or Manila Rope.)
 Broderick & Bascom Rope Co., St. Louis, Mo.

Talc and Soapstone Powders.
 Georgia Talc Co., Ashville, N. C.

Tanks. (Iron and Steel.)
 American Bridge Co., New York, N. Y.
 American Water Softener Co., Philadelphia, Pa.

Caldwell Co., Inc., W. E., Louisville, Ky.
 Casey-Hedges Co., Chattanooga, Tenn.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Coatesville Boiler Works, Coatesville, Pa.
 Cole Mfg. Co., R. D., Newnan, Ga.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Dixie Culvert & Metal Co., Atlanta, Ga.
 Harry Bros. Co., Newport, Ky.
 Hartley Boiler Works, Montgomery, Ala.
 Keeler Co., E., Williamsport, Pa.
 Keystone Boiler & Foundry Co., Columbia, Pa.
 Lombard Iron Works, Augusta, Ga.
 Lookout Boiler & Mfg. Co., Chattanooga, Tenn.
 Memphis Steel Construction Co., Memphis, Tenn.
 New Orleans Roofing & Metal Wks., New Orleans, La.
 New York Central Iron Wks. Co., Hagerstown, Md.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.
 Schofield Iron Works, Macon, Ga.
 Struthers-Weiss Co., Warren, Pa.
 Snyder Pump & Well Co., Inc., Richmond, Va.
 Tennessee Metal Culvert Co., Nashville, Tenn.
 Twin City Boiler Works, Bristol, Va.-Tenn.
 Virginia Bridge & Iron Co., Roanoke, Va.
 Walsh & Weidner Boiler Co., Chattanooga, Tenn.

Tanks. (Wood.)
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Davis & Sons, G. A., Palatka, Fla.
 Snyder Pump & Well Co., Inc., Richmond, Va.

Tapes. (Measuring.)
 Lufkin Rule Co., Saginaw, Mich.
 Starrett Co., L. S., Athol, Mass.

Telephones. (Supplies, Equipment.)
 Piedmont Electric Co., Asheville, N. C.
 Western Electric Co., New York, N. Y.

Telephone Service.
 American Telephone & Telegraph Co.

Terminal Warehouse.
 Union Terminal Co., Jacksonville, Fla.

Terra-Cotta. (Ornamental.)
 Atlanta Terra-Cotta Co., Atlanta, Ga.
 Bibb Sewer Pipe Co., Macon, Ga.
 Maryland Terra-Cotta Co., Baltimore, Md.
 Pomona Terra-Cotta Co., Pomona, N. C.
 Southern Building Material Co., Norfolk, Va.
 Stevens' Sons Co., H., Macon, Ga.

Threshers.
 Cardwell Machine Co., Richmond, Va.

Tiering Machines. (Portable.)
 Economy Engineering Co., Chicago, Ill.

Tile (Drain).
 Bibb Sewer Pipe Co., Macon, Ga.
 Gray Concrete Co., Thomasville, N. C.
 Oconee Brick & Tile Co., Milledgeville, Ga.

Tramway. (Overhead.)
 Spidel, J. G., Reading, Pa.

Tramway. (Wire Rope)
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Caldwell & Sons Co., H. W., Chicago, Ill.
 Link-Belt Co., Nictown (Philadelphia), Pa.
 Waterbury Co., New York, N. Y.

Transformers.
 Crocker-Wheeler Co., Amper, N. J.

Trench Excavator. [See Excavator (Trench.)]

Trucks. (Dry Kiln.)
 Moore Dry Kiln Co., L., Jacksonville, Fla.

Trucks. (Elevating for Factories, etc.)
 National Scale Co., Chicopee Falls, Mass.

Trucks. (Motor, Gasoline.)
 White Co., The, Cleveland, O.

Trucks. (Platform, Freight, Mill, Factory, etc.)
 Bernstein Mfg. Co., Phila., Pa.
 Chase Dryd., & Mfg. Co., Columbus, O.

Trucks. (Storage Battery Auto.)
 Westinghouse Machine Co., Pittsburgh, Pa.

Trucks (Storage Battery) [For Warehouses & Industrial Plants]
 Elwell Parker Electric Co., The, New York, N. Y.

Trust Companies. [See Bankers and Brokers.]

Tube Well Strainers.
 Cook Well Co., St. Louis, Mo.

Tubes. (Boiler.)
 Cincinnati Iron & Steel Co., Cincinnati, O.
 National Tube Co., Pittsburgh, Pa.

Tubing.
 La Belle Iron Works, Steubenville, O.
 National Tube Co., Pittsburgh, Pa.
 Youngstown Sheet & Tube Co., Youngstown, O.

Turbines. (Hydraulic.)
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 Davis Foundry & Machine Wks., Rome, Ga.
 Leffel & Co., James, Springfield, O.
 Poole Engineering & Mach. Co., Baltimore, Md.
 Salem Foundry & Machine Wks., Salem, Va.
 Smith Co., S. Morgan, York, Pa.

Turbines. (Steam.)
 Allis-Chalmers Mfg. Co., Milwaukee, Wis.
 De Laval Steam Turbine Co., Trenton, N. J.
 Ft. Wayne Electric Works, Ft. Wayne, Ind.
 General Electric Co., Schenectady, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.
 Terry Steam Turbine Co., Hartford, Conn.
 Western Electric Co., New York, N. Y.
 Westinghouse Machine Co., Pittsburgh, Pa.

Turn Buckles.
 Broderick & Bascom Rope Co., St. Louis, Mo.

Wall Ties.
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.
 Page Woven Wire Fence Co., Adrian, Mich.

Warehouse. (Storage.)
 Union Terminal Co., Jacksonville, Fla.

Washers. (Ore and Phosphate.)
 Bailey-Lobby Co., Charleston, S. C.
 Cameron & Barkley Co., Charleston, S. C.
 McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Washers and Rivets. [See Bolts, Nuts, Rivets, Studs and Washers.]

Watchman's Clocks.
 Watchman's Clock & Supply Co., New York, N. Y.

Water Filters. (See Filters, Water, etc.)

Waterproofing. (For Brick Work.)
 Barrett Mfg. Co., Philadelphia, Pa.
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.
 Standard Paint Co., The, New York, N. Y.

Waterproofing. (For Concrete.)
 Barrett Mfg. Co., Philadelphia, Pa.
 McCormick Waterproof Portland Cement Co., St. Louis, Mo.
 Standard Paint Co., The, New York, N. Y.

Water-Softening Apparatus. (Purifying.)
 American Water Softener Co., Philadelphia, Pa.
 International Filter Co., Chicago, Ill.
 N. Y. Cont. Jewell Filtr'n Co., New York, N. Y.
 Tucker & Laxton, Charlotte, N. C.

Water-Wheels. [See Turbines. (Hydraulic.)]

Water-Works Supplies and Appliances.
 American Cast Iron Pipe Co., Birmingham, Ala.
 American Pipe & Constr. Co., Philadelphia, Pa.
 Bourdon Copper & Brass Wks. Co., Cincinnati, O.
 Clark Co., H. W., Mattoon, Ill.
 Clow & Sons, James B., Chicago, Ill.
 Coldwell-Wilcox Co., Newburgh, N. Y.
 Columbian Iron Works, Chattanooga, Tenn.
 Donaldson Iron Co., Evans, Pa.
 Glamorgan Pipe & Foundry Co., Lynchburg, Va.
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.
 Layne & Bowler Co., Houston, Tex.
 Leadite Co., Inc., The, Philadelphia, Pa.
 Lynchburg Foundry Co., Lynchburg, Va.
 Mason Iron & Steel Co., Massillon, Ohio.
 Modern Equipment Co., Savannah, Ga.
 Pomona Terra-Cotta Co., Pomona, N. C.
 Salem Dryd. & Machine Works, Salem, Va.
 Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.
 Standard Spiral Pipe Works, Chicago, Ill.
 Stevens' Sons Co., H., Macon, Ga.
 U. S. Cast Iron Pipe & Fdry. Co., Burlington, N. J.
 Warren Foundry & Machine Co., New York, N. Y.
 Washburn Co., A. H., Charlotte, N. C.
 Wood & Co., R. D., Philadelphia, Pa.

Welding Plants. (Oxy-Acetylene.)
 Milburn Co., Alex. N., Baltimore, Md.

Well Contractors. (Oil, Artesian, etc.)
 Columbia Pump & Well Co., Washington, D. C.
 Cook Well Co., The, St. Louis, Mo.
 Hughes Specialty Well Drill Co., Charleston, S. C.
 Lee Bros. & Greer, Spartanburg, S. C.
 Stothoff Bros., Flemington, N. J.
 Snyder Pump & Well Co., Inc., Richmond, Va.

Well Tools and Supplies.
 Cook Well Co., The, St. Louis, Mo.
 Keystone Pump & Well Engine Co., Beaver Falls, Pa.
 Williams Bros., Itasca, N. Y.

Wheels and Axles.
 Electric Wheel Co., Quincy, Ill.
 Oliver Mfg. Co., W. J., Knoxville, Tenn.

Wheelbarrows and Carts.
 Sterling Wheelbarrow Co., Milwaukee, Wis.
 Syracuse Chilled Plow Co., Syracuse, N. Y.

Wheels. (Steel and Steel Tired.)
 Carnegie Steel Co., Pittsburgh, Pa.

Window Frames and Sash. (Fireproof.)
 Detroit Steel Products Co., Detroit, Mich.
 Edwards Mfg. Co., The, Cincinnati, O.
 Voigtman & Co., Chicago, Ill.

Window Guards. (Wire.) [See Wire Goods.]

Windmills.
 Caldwell Co., Inc., W. E., Louisville, Ky.
 Columbia Pump & Well Co., Washington, D. C.

Wire. (Barbed Wire, etc.)
 Roebeling's Sons Co., John A., Trenton, N. J.
 Youngstown Sheet & Tube Co., Youngstown, O.

Wire. (Signal.)
 American Steel & Wire Co., Chicago, Ill.
 Safety Insulated Wire & Cable Co., New York, N. Y.

Wire Cloth. (Iron, Steel, Brass, etc.)
 Aronstam Co., L., Columbia, S. C.
 Caldwell & Sons Co., The, H. W., Chicago, Ill.
 Meyers Mfg. Co., The, Fred J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Goods.
 Bolles Iron & Wire Wks., J. E., Detroit, Mich.
 Cincinnati Mfg. Co., Cincinnati, O.
 Dow Wire & Iron Works, Louisville, Ky.
 Dufur & Co., Baltimore, Md.
 Dufur, Baggett & Co., Baltimore, Md.
 Meyers Mfg. Co., The, Fred J., Hamilton, O.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Netting.
 American Steel & Wire Co., Chicago, Ill.
 New Jersey Wire Cloth Co., Trenton, N. J.

Wire Rope.
 Broderick & Bascom Rope Co., St. Louis, Mo.
 Roebeling's Sons Co., John A., Trenton, N. J.
 Waterbury Co., New York, N. Y.
 Williamsport Wire Rope Co., Williamsport, Pa.
 Youngstown Sheet & Tube Co., Youngstown, O.

Wire Rope Clips.
 American Hoist & Derrick Co., St. Paul, Minn.
 American Steel & Wire Co., Chicago, Ill.
 Broderick & Bascom Rope Co., St. Louis, Mo.

Wires and Cables. (Insulated.)
 American Steel & Wire Co., Chicago, Ill.
 Safety Insulated Wire & Cable Co., New York, N. Y.

Wood Blocks. (For Paving and Factory Floors.)
 U. S. Wood Preserving Co., New York, N. Y.

Wood Distillation.
 Struthers-Weiss Co., Warren, Pa.

Wood Pipe. (For Water, etc.)
 Wyckoff & Son Co., A., Elmira, N. Y.

Wood. (Preservative.)
 Barrett Mfg. Co., Phila., Pa.

Woodworking Machinery.
 Gibbs Mach. Co., Inc., Columbia, S. C.
 Kline, Lewis T., Alpena, Mich.
 Lane Mfg. Co., Montpelier, Vt.
 Shimer & Sons, Samuel J., Milton, Pa.
 Sidney Tool Co., The, Sidney, Ohio.
 Smith Machine Co., H. B., Smithville, N. J.

Yarn. (Tarred Signal.)
 Columbian Rope Co., Auburn, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.

Important Information For Advertisers in Manufacturers Record

Publication day—Every Thursday.
 Advertising copy not requiring proof must reach us one week in advance of publication day.
 When proof is required, two weeks in advance.
 Width of column, 2½ inches; length, 13 inches.
 Four columns to page.

TYPOGRAPHICAL ARRANGEMENT

We desire to use, as far as possible, uniform display type and borders and avoid the use of black background cuts. The uniform border is two-point plain rule for all spaces less than a full page.
 Copy for advertisements other than those to be used in special departments should be prepared for two-column measure for spaces less than a quarter page; for a quarter page or larger, in two or four columns.

Tile (Interior)
 Amer. Enam. Brick & Tile Co., New York, N. Y.
 P & F Tile Co., Birmingham, Ala.

Tile. (Mantel and Promenade.)
 Hood Brick Co., B. Midlin, Atlanta, Ga.

Tile. (Rubber.)
 Goodyear Tire & Rubber Co., Akron, O.

Tile (Structural)
 Bibb Sewer Pipe Co., Macon, Ga.
 Oconee Brick & Tile Co., Milledgeville, Ga.

Timbers. (Creosoted.)
 American Creosote Works, New Orleans, La.
 Republic Creosoting Co., Indianapolis, Ind.

Tin and Terne Plates.
 American Sheet & Tin Plate Co., Pittsburgh, Pa.

Tires. (Rubber.)
 Goodyear Tire & Rubber Co., Akron, O.

Tobacco Machinery.
 Buckeye Iron & Brass Works, Dayton, O.
 Cardwell Machine Co., Richmond, Va.

Tools. (Machinists.)
 American Die & Tool Co., Reading, Pa.
 Holland Mfg. Co., Erie, Pa.
 Morse Twist Drill & Mach. Co., New Bedford, Mass.

Tools. (Mechanical.)
 Starrett Co., L. S., Athol, Mass.

Tools. (Pneumatic.)
 Amer. Compressor & Pump Co., Baltimore, Md.
 Chicago Pneumatic Tool Co., Chicago, Ill.
 Independent Pneumatic Tool Co., Chicago, Ill.

Tools. (Tinners.)
 Danzer Metal Works, Hagerstown, Md.

Torches.
 Wall Mfg. Supply Co., P., Allegheny, Pa.

Towers. (Electric Transmission.)
 American Bridge Co., of New York, N. Y.
 Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

Towers. (Steel and Wood.)
 Caldwell & Co., Inc., W. E., Louisville, Ky.
 Chattanooga Boiler & Tank Co., Chattanooga, Tenn.
 Chicago Bridge & Iron Works, Chicago, Ill.
 Cole Mfg. Co., R. D., Newnan, Ga.
 Columbia Pump & Well Co., Washington, D. C.
 Des Moines Bridge & Iron Co., Des Moines, Ia.
 Memphis Steel Const. Co., Memphis, Tenn.
 Pittsburgh-Des Moines Steel Co., Pittsburgh, Pa.

Track Material. (Steam & Industrial Railroads.)
 Conley Frog & Switch Co., Memphis, Tenn.

Traction Engines.
 Fairbanks-Morse & Co., Atlanta, Ga.
 Farquhar Co., Ltd., A. B., York, Pa.
 Heer Engine Co., Portsmouth, O.
 Holt Mfg. Co., The, Peoria, Ill.
 Huber Mfg. Co., The, Marion, O.

Turntables.
 American Bridge Co., New York, N. Y.
 Easton Car & Construction Co., Easton, Pa.
 Virginia Bridge & Iron Co., Roanoke, Va.

Twine.
 Columbian Rope Co., Auburn, N. Y.
 Intern'l Cotton Mill, New York, N. Y.
 Plymouth Cordage Co., North Plymouth, Mass.

Unions.
 Dart Mfg. Co., E. M., Providence, R. I.
 National Tube Co., Pittsburgh, Pa.

Vacuum Cleaning Apparatus.
 King Co., F. E., Norfolk, Va.
 United Electric Co., The, Canton, O.

Valves.
 Bourbon Copper & Brass Wks. Co., Cincinnati, O.
 Columbian Iron Works, Chattanooga, Tenn.
 Frick Co., The, Waynesboro, Pa.
 Glamorgan Pipe & Fdry Co., Lynchburg, Va.
 Ide & Sons, A. L., Springfield, Ill.
 Jenkins Bros., New York, N. Y.
 Lunkenheimer Co., The, Cincinnati, O.
 National Tube Co., Pittsburgh, Pa.
 Powell Co., Wm., Cincinnati, O.
 Pittsburgh Valve Fdry. & Const. Co., Pittsburgh, Pa.
 York Mfg. Co., York, Pa.

Valve Boxes.
 Clark Co., H. W., Mattoon, Ill.

Varnish.
 Berry Bros., Detroit, Mich.
 Murphy Varnish Co., Newark, N. J.

Veneer Machines.
 Titus, E. E., Petersburg, Va.

Ventilating Apparatus. (Engineers' and Contractors.)
 Buffalo Forge Co., Buffalo, N. Y.
 Sturtevant Co., B. F., Hyde Park, Boston, Mass.

Vises.
 Holland Mfg. Co., Erie, Pa.

Wagons. (Dump.)
 Troy Wagon Works Co., The, Troy, O.
 Western Wheeled Scraper Co., Aurora, Ill.

Wainscoting. (Tile.)
 Northcross Mantel Co., W. J., Memphis, Tenn.

Wall Coping.
 Southern Sewer Pipe Co., Birmingham, Ala.

Wall Plugs. (Galvanized.)
 Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Advs. marked * appear every other week.
 Advs. marked † appear in first issue of the month.
 Advs. marked ‡ not in this issue.

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Arrive Old Point Daily.....5:30 A. M. Leave Portsmouth week-days.....5:30 P. M.

Arrive Norfolk Daily.....7:00 A. M. Leave Norfolk Daily.....5:30 P. M.

Arrive Portsmouth Daily.....5:00 A. M. Leave Old Point Daily.....7:30 P. M.

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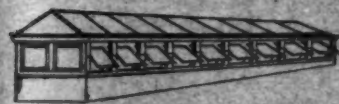
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